

ARMY POWER PROCUREMENT

UTILRATE for DOS

Version 1.0 (Beta 1)

*Utilities Services Sales Rates Computations Software
(Without HELP System)*

USER'S GUIDE

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Chapter 1 - Introduction

Welcome to UTILRATE for DOS Version 1.0 (Beta 1)¹, a utilities services sales rates computations software. Our Installations Support Team has developed this program to assist Army installations in their generation of utilities services sales rates. Please let us know if your installation is benefiting from this program by writing us at the address found in the title page.

UTILRATE for DOS Overview

UTILRATE for DOS runs natively under MS-DOS (version 3.3 or higher). It can also be run under Microsoft Windows 3.1 (enhanced mode), Windows for Workgroups 3.11 (enhanced mode) and Windows 95, as an MS-DOS program running under Windows. The recommended minimum computer configuration to run this program is the same needed to run the DOS version of Lotus 123 using EMS expanded memory, and any parallel printer (laser printer preferable) that support the IBM (ASCII) extended characters set 2 and is connected to the computer's local LPT1 parallel port. It is not a requirement to use a color display/monitor adapter and a mouse, however, the program operation is enhanced by their use. Please refer to Chapter 2 for more details on hardware and software requirements.

UTILRATE for DOS performs sales rates computations for the following utilities services:

POST

- Electric Power
- Filtered Water
- Unfiltered Water
- Sewage
- Refuse Collection/Disposal
- Firm Natural Gas
- Interruptible Natural Gas
- Liquefied Petroleum Gas
- Fuel Oil No. 2
- Fuel Oil No. 6
- Steam
- Hot Water
- Space Cooling
- Space Heating

FAMILY HOUSING

- Electric Power
- Filtered Water
- Sewage
- Refuse Collection/Disposal
- Firm Natural Gas
- Liquefied Petroleum Gas
- Fuel Oil No. 2
- Steam
- Hot Water
- Space Cooling
- Space Heating

It also offers the following technical capabilities:

¹ The UTILRATE for DOS Version 1.0 (Beta 1) HELP system is inoperative. Final Version 1.0 will contain an operational HELP system. If you need help with Version 1.0 (Beta 1), you can consult this user's guide or contact Technical Assistance (see Appendix A).

- Generation of the installation's official annual utilities sales tariff book, including cover sheet containing the installation's point of contact and approval authority, post and family housing rates summaries, rates definitions, matrices showing the rates applicable to on-post and off-post purchasers, and the applicable rates computations worksheets.
- Selection of utilities consumption unit labels using unit label buttons.
- Two family housing configurations (automatic generation of family housing rates from post computations or entering separately the family housing purchased utilities consumption and cost data).
- Estimation of the electric power consumption of up to 50 filtered water pumps, unfiltered water pumps or sewage pumps for post rates, where applicable, and up to 10 pumps for family housing rates (under configuration no. 2), where applicable.

Advantage of Using UTILRATE for DOS

Presently, the use of UTILRATE for DOS is not mandatory. Those installations, under the Army Power Procurement Officer Representative (APPOR) jurisdiction of the Directorate of Army Power Procurement, U.S. Army Center for Public Works, which decide to use this program to compute their annual utilities services sales rates, will have the advantage of receiving automatic approval of the rates computed using this program without seeking the approval of higher authority, by only using the program. Those installations deciding not to use, or are unable to use, this program in its entirety, will continue to use Technical Note (TN) 420-41-1 for the computations of their utilities services sales rates and seek the approval of their APPOR. Installations deciding not to use, or are unable to use, this program for the computation of specific utilities services sales rates, will continue to use TN 420-41-1 and seek the approval of the APPOR for the computations of those specific utilities services sales rates.

Regulation and Guidance

The sales of utilities services are governed by the following regulation and guidance:

- *Chapter 1, Chapter 3, and Appendix C of the Army regulation (AR) 420-41 (see Appendix B).* AR 420-41 establishes policy, responsibilities, procedures and contract forms for the sales of utilities services.

- *Technical Note (TN) 420-41-1 (see Appendix C).* TN 420-41-1 provides technical guidance for the calculation of rates for the sales of utilities services.
- *UTILRATE for DOS (this program).* An MS-DOS stand-alone software used for the performance of utilities services sales rates computations and the development of the installation's utilities sales tariff book.

When UTILRATE for DOS is used to compute the utilities services sales rates, it supersedes Appendix C of the TN 420-41-1.

User's Guide Structure

This user's guide is divided into 5 chapters and 8 appendices. A brief description of the chapters and appendices follows:

- *Chapter 1 - Introduction (this chapter).* Provides an introduction and an overview of UTILRATE for DOS, states the advantage of using the program, lists the regulation and guidance governing the sales of utilities services at Army installation, and provides an overview of the user's guide structure.
- *Chapter 2 - Installation.* Provides detailed guidance on the software and hardware requirements, memory configuration, printer configuration, installation and setup of UTILRATE for DOS.
- *Chapter 3 - Program Operation.* Provides guidance on the overall operation of the program (starting the program, using the HELP system, navigating the program, main menu structure, entering and editing data, creating a new tariff book file, opening a file, saving your work, printing, and exiting the program).
- *Chapter 4 - Menu Commands.* Provides a brief description of all the menu commands used in UTILRATE for DOS.
- *Chapter 5 - Rates Computations.* Provides the detail of entering data and performing rates computations using UTILRATE for DOS, and how to assemble the official utilities sales tariff book binder.
- *Appendix A - Technical Assistance Point of Contact.* Provides the technical point of contact whenever you experience a problem and need assistance with UTILRATE for DOS.
- *Appendix B - Army Regulation (AR) 420-41 and Related Memorandums.* Contains copies of the AR 420-41, 15 September 1990, Facilities Engineering - Acquisition

and Sale of Utilities Services, as amended by Interim Change No. I01, 30 September 1992; memorandum, CEHSC-C (presently CECPW-C), 7 June 1993, subject: Technical Approval Authority of Utility Acquisition and Sales Contracts; and memorandum, CECPW-C, 8 October 1993, subject: Utilities Contract Management.

- *Appendix C - Technical Note (TN) 420-41-1.* Contains a copy of the TN 420-41-1 (Revision 1), 21 January 1992, Directorate of Army Power Procurement - Utilities Contracts - Guidance for Calculation of Rates for the Sale of Utilities Services.
- *Appendix D - Blank Utilities Sales Tariff Book Printout (Family Housing Configuration No. 1).* Contains a blank utilities sales tariff book printout using the family housing rates computations worksheets under the family housing configuration no. 1.
- *Appendix E - Blank Family Housing Main Worksheets Printout (Family Housing Configuration No. 2).* Contains a blank family housing main worksheets printout portion of the utilities sales tariff book when the program has been set to the family housing configuration no. 2.
- *Appendix F - Blank Power for Pumping Filtered Water Worksheet Printout.* Contains a blank power for pumping filtered water worksheet printout.
- *Appendix G - Blank Abnormal Maintenance Worksheet Printout.* Contains a blank abnormal maintenance worksheet printout.
- *Appendix H - Utilities Contracting Points of Contact.* Contains a list of the points of contact for utilities contracting, acquisition as well as sales.

Chapter 2 - Installation

Before installing UTILRATE for DOS, please make sure that your computer system meets the software and hardware requirements specified below.

Software Requirement

- MS-DOS Version 3.3 or higher; or
Microsoft Windows 3.1 in enhanced mode; or
Microsoft Windows for Workgroups 3.11 in enhanced mode; or
Microsoft Windows 95.
- Expanded Memory Specification (EMS), LIM Version 3.2 or later, driver.
- Optional - Microsoft compatible mouse driver (highly recommended).
- 600 KB conventional memory.

Hardware Requirement

COMPUTER

- IBM PC, XT, or AT 100% compatible Computer.
- RAM
 - Running under MS-DOS: 4 MB RAM minimum (at least 2 MB emulating EMS expanded memory).
 - Running under Microsoft Windows: 8 MB RAM minimum (at least 2 MB emulating EMS expanded memory).
- 2 MB free hard disk space (1 MB hard disk space for program installation and an additional 1 MB for generated tariff book files storage).
- Optional - Math coprocessor.
- CGA, EGA, VGA, monochrome, black and white, or Hercules display adapter (color display/monitor adapter is highly preferred).
- Optional - Microsoft compatible mouse (highly recommended).

PRINTER

- Parallel printer (laser printer preferable) connected to the computer's local LPT1 parallel port.
- Support IBM (ASCII) extended characters set 2.

EMS Memory Configuration

This section will only address the configuration of EMS memory for computers that have an 80386 or higher microprocessor. Please refer to your computer manual and your MS-DOS manual for configuring other processors.

To Configure a Computer with a 80386 or Higher Microprocessor for EMS

1. Find if the HIMEM.SYS and EMM386.EXE files exist in your \DOS (or \BIN) or \WINDOWS subdirectory. Write down the subdirectory path name where you found the files. If you found the files in both subdirectories, write down the Windows subdirectory path name.
2. With any ASCII text editor, modify the CONFIG.SYS file found in the computer main hard disk drive (drive C:) root directory (if the CONFIG.SYS file does not exist, then create the file). Assuming that the files are in the C:\WINDOWS subdirectory, make sure that the following lines, in the order shown, are included at the beginning of the CONFIG.SYS file (if the files are found in another subdirectory, substitute the C:\WINDOWS for the other subdirectory path name)².

```
DEVICE=C:\WINDOWS\HIMEM.SYS
DEVICE=C:\WINDOWS\EMM386.EXE AUTO
```

3. Save the CONFIG.SYS file in the main hard disk drive root directory.

Printer Configuration

UTILRATE for DOS uses any parallel printer connected to the computer's local LPT1 port, also known as a parallel port or Centronics port. In addition, the printer must be able to be configured to print the IBM extended characters set 2. Almost all printers support the IBM extended characters sets through the setup of DIP switches, jumpers, any other electronic switches or a combination of these. Please consult the printer owner's manual for the setup of the IBM extended characters set in your printer.

We have included a file named PRINTER.TST in the installation disk that you can print using the DOS EDIT or PRINT command. PRINTER.TST contains the IBM extended characters most commonly used by UTILRATE for DOS. This file will also assist you in the configuration of UTILRATE for DOS printer page setup settings. We recommend that you print PRINTER.TST using the EDIT or PRINT command at the DOS prompt or through an MS-DOS window if running any version of Microsoft Windows.

² Please consult the Microsoft MS-DOS user's guide to learn more about the HIMEM.SYS and EMM386.EXE device driver files and how to optimize the expanded memory configuration. We recommend that you consider the use of any commercial memory manager utility program for the optimization of your computer memory.

To Print PRINTER.TST and to Configure your Printer

1. Insert the UTILRATE for DOS installation disk in drive A: or B:.
2. Using the DOS EDIT³ command and assuming your computer floppy drive is A:, open the file A:PRINTER.TST and print it. If your DOS does not contain the EDIT.COM command, as an alternate, you can type and execute at the computer DOS prompt the following:

```
PRINT /D:LPT1 A:PRINTER.TST
```

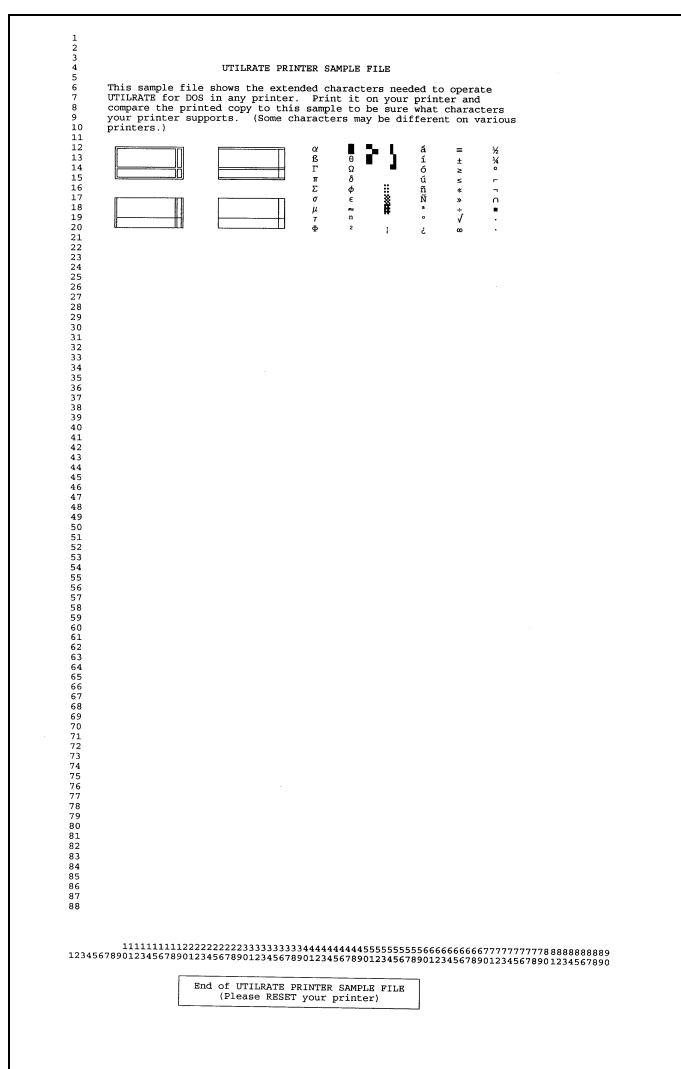


Figure 2.1 - PRINTER.TST Printout.

³ Make sure that the subdirectory path name, where your DOS command files reside, is included in the DOS PATH statement in the AUTOEXEC.BAT file.

3. Remove the printout and compare it with figure 2.1. If the printout resembles figure 2.1⁴, congratulations, your printer is setup to support the IBM extended characters set 2. If the printout is different from figure 2.1, then consult your printer owner's manual to configure your printer to support the IBM extended characters set 2 and print PRINTER.TST again. Continue reconfiguring your printer and printing PRINTER.TST until the printout resembles figure 2.1. Please keep the printout handy since you will need it later to configure the UTILRATE for DOS printer page setup settings.

UTILRATE for DOS Installation

Please read these instructions completely before attempting the installation of the UTILRATE for DOS program. To install UTILRATE for DOS, follow the instructions that correspond to your computer disk operating system environment below. Please note that the first time that the UTILRATE for DOS program is executed, the program title screen will show up twice; this is normal. Thereafter, the program title screen will show up once every time that the program is loaded.

Under MS-DOS

1. Insert the UTILRATE for DOS installation disk in drive A: or B:.
2. To initiate the installation and assuming that the computer floppy drive is A:, type at the DOS prompt:

A: INSTALL

3. Press [**↵** **Enter**].
4. Follow the installation program instructions in the computer monitor. The UTILRATE for DOS installation program will give you a chance to select a hard drive and a default subdirectory⁵ where the program will be installed.
5. When the UTILRATE for DOS program title screen (not the installation program title screen) shows up, press [**↵** **Enter**] twice. You have the choice to exit UTILRATE for DOS by pressing [**F10**], then **F** for **F**ile, then **X** for **e**xit, typing "Y" at the "Continue with EXIT (Have you saved changes?) (Y/N)" prompt and pressing [**↵** **Enter**]; or not to exit, finish reading all the steps of this section and skip the following two sections and continue with the "UTILRATE for DOS Setup" section below.

⁴ The PRINTER.TST printout may print more than one page; truncating, or wrapping around, the line numbers or column numbers.

⁵ We strongly recommend that you use the suggested default subdirectory "\\UTILRATE".

6. If you desire to run UTILRATE for DOS from any subdirectory, we recommend that you add the subdirectory name path of the subdirectory where you installed the program to the DOS PATH statement in the AUTOEXEC.BAT batch file at the root directory and also edit the UTILRATE.BAT batch file found in the subdirectory where you installed the program to include the subdirectory path for both the RUNUR.EXE and UTILRATE.OVR file references. For example, assuming that you installed the program in the subdirectory C:\UTILRATE, the second line of the UTILRATE.BAT batch file should be changed to read:

```
C:\UTILRATE\RUNUR.EXE C:\UTILRATE\UTILRATE.OVR
```

Under Microsoft Windows 3.1 or Windows for Workgroups 3.11

1. Insert the UTILRATE for DOS installation disk in drive A: or B:.
2. Run Microsoft Windows 3.1 or Windows for Workgroups 3.11 by typing at the DOS prompt:

```
WIN
```

3. Under the Windows Program Manager, open the File Menu.
4. Select Run... .
5. Assuming that the computer floppy drive is A:, in the Run dialog box “Command Line:” type:

```
A: INSTALL
```

6. Select **OK** or press [**↵** **Enter**].
7. Follow the installation program instructions in the computer monitor. The UTILRATE for DOS installation program will give you a chance to select a hard drive and a default subdirectory⁶ where the program will be installed.
8. When the UTILRATE for DOS program title screen (not the installation program title screen) shows up, press [**↵** **Enter**] twice. Exit UTILRATE for DOS by pressing [**F10**], then **F** for **F**ile, then **X** for **e**xit, typing “Y” at the “Continue with EXIT (Have you saved changes?) (Y/N)” prompt and pressing [**↵** **Enter**].

⁶ We strongly recommend that you use the suggested default subdirectory “\UTILRATE”.

9. If you installed the UTILRATE for DOS program in any drive and/or subdirectory other than C:\UTILRATE, with the PIF Editor⁷, usually found in the Main Program Group window, open the UTILRATE.PIF file, found in the drive and subdirectory that you specified through the UTILRATE for DOS Installation Program. Edit the “Program Filename:” and the “Start-up Directory:” lines to agree with the drive and/or subdirectory that you installed the program.
10. To create a Program Group, at the Windows Program Manager, open the **F**ile Menu.
11. Select **N**ew... .
12. Select the “Program **G**roup” button and Select **OK** or press [**↵** **Enter**].
13. In the “**D**escription:” line, type:

UTILRATE for DOS
14. Press [TAB] and in the “**G**roup File:” line, type:

UTILRATE
15. Select **OK** or press [**↵** **Enter**]. A UTILRATE for DOS Program Group window is opened.
16. To create a Program Item under the UTILRATE for DOS Program Group, at the Windows Program Manager, open the **F**ile Menu.
17. Select **N**ew... .
18. Select the “Program **I**tem” button and Select **OK** or press [**↵** **Enter**].
19. In the Program Item Properties dialog box, select **B**rowse... .
20. At the Browse dialog box, navigate in the Directories box to the \UTILRATE subdirectory (or the subdirectory where you installed the UTILRATE for DOS program files) and highlight the UTILRATE.PIF file.
21. Select **OK** or press [**↵** **Enter**].
22. At the Program Item Properties dialog box, select **C**hange Icon... .
23. At the Change Icon warning box, select **OK** or press [**↵** **Enter**].

⁷ Please see your Microsoft Windows User’s Guide for the operation of the PIF Editor. Contact Technical Assistance (see Appendix A) if you need assistance in opening and editing the UTILRATE.PIF file with the PIF Editor.

24. At the Change Icon dialog box, select **Browse...** .
25. At the Browse dialog box, navigate in the Directories box to the \UTILRATE subdirectory (or the subdirectory where you installed the UTILRATE for DOS program files) and highlight the UTILRATE.ICO file.
26. Select **OK** or press [**↵** **Enter**].
27. Select **OK** or press [**↵** **Enter**] at the Change Icon dialog box.
28. Select **OK** (do not press [ENTER]) at the Program Item Properties dialog box.
29. Congratulations!, you have installed UTILRATE for DOS under Windows. Please skip the following section and continue with the “UTILRATE for DOS Setup” section below.

Under Microsoft Windows 95⁸

1. Insert the UTILRATE for DOS installation disk in drive A: or B:.
2. Click the Taskbar **Start** button to open the Start menu and select **Run...** .
3. Assuming that the computer floppy drive is A:, in the “Open:” box type:

A: INSTALL
4. Select **OK** or press [**↵** **Enter**].
5. Follow the installation program instructions in the computer monitor. The UTILRATE for DOS installation program will give you a chance to select a hard drive and a default subdirectory⁹ (folder) where the program will be installed.
6. When the UTILRATE for DOS program title screen (not the installation program title screen) shows up, press [**↵** **Enter**] twice. Exit UTILRATE for DOS by pressing [**F10**], then **F** for **F**ile, then **X** for **eXit**, typing “Y” at the “Continue with EXIT (Have you saved changes?) (Y/N)” prompt and pressing [**↵** **Enter**].
7. With the right mouse button, click the Windows Taskbar in an empty area.

⁸ The loading of Microsoft Windows 95 differs from the loading of Microsoft Windows 3.1 and Windows for Workgroups 3.11. Windows 95 is a disk operating system. It is automatically loaded when you turn on your computer, unless you have setup your computer to run several disk operating systems.

⁹ We strongly recommend that you use the suggested default subdirectory (folder) “\UTILRATE”.

8. Select **P**roperties.
9. Click the **S**tart Menu Programs tab.
10. Click the **A**dd... button.
11. Click the **B**rowse... button.
12. Navigate to the drive and folder where the UTILRATE for DOS program was installed and select the UTILRATE.PIF file. Please note that Windows 95 does not show the filename extension of PIF files, even if you have set up Windows 95 to show MS-DOS file extensions. You will see two UTILRATE files, one is UTILRATE.BAT and the other is UTILRATE.PIF. To find out which one you are selecting, click each one of the UTILRATE files until the “File name:” box shows UTILRATE.PIF.
13. With the right mouse button click UTILRATE.PIF and select **P**roperties.
14. Click the **P**rogram tab.
15. If you installed the UTILRATE for DOS program in any drive and/or subdirectory (folder) other than C:\UTILRATE, edit the “Cmd line:” and the “Working:” boxes to agree with the drive and/or subdirectory (folder) that you installed the program.
16. Click the **C**hange Icon... button.
17. Click the **B**rowse... button.
18. Navigate to the drive and subdirectory (folder) where you installed the UTILRATE for DOS program and select UTILRATE.ICO. Note that the filename extension may or may not show up depending whether or not you set up Windows 95 to show MS-DOS file extensions.
19. Click the **O**pen button or press [o Enter].
20. Click the **O**K button (do not press [ENTER]).
21. Click the **O**K button (do not press [ENTER]) to get out of the Utilrate Properties dialog box.
22. Click the **O**pen button or press [o Enter].
23. Click the **N**ext > button or press [n Enter].

24. Click the **New Folder...** button.
25. In the folder name box, type:

UTILRATE for DOS
26. Click the **Next >** button or press [**↵** **Enter**].
27. Click the **Finish** button or press [**↵** **Enter**].
28. Click the **OK** button (do not press [ENTER]) to get out of the Taskbar Properties dialog box.
29. Congratulation!, you have installed UTILRATE for DOS under Microsoft Windows 95. Please continue with the “UTILRATE for DOS Setup” section below.

UTILRATE for DOS Setup

To setup UTILRATE for DOS you need first to start the program. Please follow the instructions corresponding to your operating environment.

Starting UTILRATE for DOS

Starting from MS-DOS

1. To start the UTILRATE for DOS program under MS-DOS, if you set up the DOS PATH statement in the AUTOEXEC.BAT batch file to contain the subdirectory name where you installed the program and edited the UTILRATE.BAT batch file as recommended in the installation section, at the DOS prompt of any subdirectory, type¹⁰:

UTILRATE

2. Press [**↵** **Enter**].
3. Press [**↵** **Enter**] to acknowledge the UTILRATE for DOS copyright statement.

¹⁰ If you did not set up the DOS PATH statement in the AUTOEXEC.BAT and did not edit the UTILRATE.BAT batch file, first, you need to change to the subdirectory where UTILRATE for DOS was installed before following steps 1 and 2. For example, to start the program, assuming that you are in the C: drive and that the program was installed on the subdirectory D:\UTILRATE, you would type the following at the DOS prompt where [**↵** **Enter**] means to press the **Enter** key:

```
D: [↵ Enter]
CD \UTILRATE [↵ Enter]
UTILRATE [↵ Enter]
```

Starting from Microsoft Windows 3.1 or Windows for Workgroups 3.11

1. Assuming that Microsoft Windows is already running, open or select the **UTILRATE for DOS** program group.
2. Double click the **UTILRATE for DOS V.1.0 (B1)** icon.
3. Press [**⏎** **Enter**] to acknowledge the UTILRATE for DOS copyright statement.

Starting from Microsoft Windows 95

1. Click the Taskbar **Start** button to open the Start menu and select **Programs**.
2. Select the **UTILRATE for DOS** program group.
3. Select the **UTILRATE for DOS V.1.0 (B1)** program.
4. Press [**⏎** **Enter**] to acknowledge the UTILRATE for DOS copyright statement.

Setting up UTILRATE for DOS

UTILRATE for DOS allows you to setup your default tariff book data directory (subdirectory), family housing default configuration, default tariff book cover sheet information, tariff book default printout, printer page, and the video display. The only setup configurations that you need to setup to run UTILRATE for DOS and generate your official annual utilities sales tariff book are:

- The family housing default configuration,
- The default tariff book cover sheet information,
- The tariff book default printout, and
- The printer page.

You may change the other setup configurations, but they are not needed for the generation of the official annual utilities sales tariff book. The following explains in detail how to change all the UTILRATE for DOS setup configurations.

Default Tariff Book Data Directory Setup

The Default Tariff Book Data Directory Setup screen allows you to change the default data subdirectory, where UTILRATE for DOS saves your tariff book

data, to another existing subdirectory as well as creating a new subdirectory before changing to the new subdirectory. The default tariff book data directory TARIFFBK was setup by the installation program as a subdirectory of the subdirectory where you install the program. If you installed the program in the C:\UTILRATE subdirectory, your default tariff book data subdirectory would be C:\UTILRATE\TARIFFBK. If you do not have a conflict with the data

subdirectory generated by the installation program, we suggest that you accept the installation program default and skip this section. If you have any conflicts with the data subdirectory generated by the installation program, then proceed with the following steps to change the default tariff book data directory.

TO CHANGE THE DEFAULT DATA SUBDIRECTORY TO ANOTHER EXISTING SUBDIRECTORY

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **S** for **Setup**.
3. Press **D** for **Default Directory**.
4. At the “NEW DEFAULT DIRECTORY:” box type the full path name (including the drive letter) of the subdirectory that you want to switch.
5. Press [**↵** **Enter**].
6. With the arrow keys move the cell pointer to the **OK** button and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the **OK** button and press or click the mouse left button. The “PRESENT DEFAULT DIRECTORY:” line, at the upper portion of the screen, should show the change to the new subdirectory.
7. Press **[Esc]** to exit the Default Tariff Book Data Directory Setup screen.

TO CHANGE THE DEFAULT DATA SUBDIRECTORY TO A NON-EXISTING SUBDIRECTORY

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **S** for **Setup**.
3. Press **D** for **Default Directory**.
4. At the “CREATE DIRECTORY:” box type the full path name (including the drive letter) of the subdirectory that you want to create and switch.
5. Press [**↵** **Enter**]. Notice that the subdirectory that you typed is also shown at the “NEW DEFAULT DIRECTORY:” box.

6. With the arrow keys move the cell pointer to the **OK** button and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the **OK** button and click the mouse left button. The screen will blank out momentarily. The “PRESENT DEFAULT DIRECTORY:” line, at the upper portion of the screen, should show the change to the created subdirectory.
7. Press [**Esc**] to exit the Default Tariff Book Data Directory Setup screen.

Family Housing Default Configuration Setup

UTILRATE for DOS offers two configurations for the generation of the utilities services sales rates applicable to family housing. The family housing configurations are:

- *Configuration No. 1 (Default)* - When family housing is considered as part of the post as a whole. All utilities consumptions and costs information is picked-up by the program from the post utilities rates computations. Under this configuration, the Utilities Services/Sales officer or preparer does not have to enter any information for family housing.
- *Configuration No. 2* - When the utility is purchased expressly for family housing and the installation wants to treat family housing apart from the post. Under this configuration, the Utilities Services/Sales Officer or the preparer will need to enter all utilities consumptions and costs information related to family housing in addition to the information for the post.

The Family Housing Default Configuration Setup screen allows you to set up UTILRATE for DOS to operate in either of the above configurations.

TO CHANGE TO FAMILY HOUSING CONFIGURATION NO. 2

1. Press [**F10**] to invoke the UTILRATE for DOS menu system.
2. Press **S** for **Setup**.
3. Press **F** for **Family Housing**.
4. Type “2”¹¹.
5. Press [**↵** **Enter**].

¹¹ If later you decide to change back to the family housing configuration no. 1, just follow the above instructions and type “1” instead of “2”.

6. With the arrow keys move the cell pointer to the **Save** button and press [**↵** **Enter**], or if you have a mouse, click the **Save** button.
7. Press [**Esc**] to exit the Family Housing Default Configuration Setup screen.

Default Tariff Book Cover Sheet Information Setup

The tariff book cover sheet information is the general information that will be printed in the cover sheet of the official annual tariff book. This includes:

- Installation's Name
- Effective Period
- Director of Public Works' (DPW) Name
- Utilities Services/Sales Officer's (USSO) Name
- USSO's Telephone Numbers
- USSO's Address

The Tariff Book Cover Sheet Setup screen allows you to enter, edit, and save the above information. If you save the information as the initial default, you will be able to retrieve it every time that you create a new utilities sales tariff book and edit only the information that has changed. This will save you some time and effort when creating new tariff books later.

TO ADD THE INITIAL DEFAULT TARIFF BOOK COVER SHEET INFORMATION

1. Press [**F10**] to invoke the UTILRATE for DOS menu system.
2. Press **S** for **Setup**.
3. Press **C** for **Cover Sheet**.
4. To start entering or editing the general information, navigate the cell pointer with the arrow keys and place it on the first left cell inside the box, or if you have a mouse, click the first left cell inside the box, of the information box where you want to enter or edit the information. Type or edit¹² the

information and press [**↵** **Enter**].

NOTE: Usually the only block that changes with time is the **EFFECTIVE PERIOD** block. Therefore, we recommend that this block be left blank. If you decide to save a date in the **EFFECTIVE PERIOD** block, UTILRATE

¹² To edit the information in any of the information boxes, press [**F2**] to invoke the EDIT mode. When you finish editing, press [**↵** **Enter**]

for DOS allows you to enter the fiscal year (FY) and the calendar year (CY) information using up to 4 numeric digits. To enter a period in the OTHER period data input box, you must enter it using the format: MMM YY - MMM YY, e.g., Jan 96 - Dec 96.

5. With the arrow keys move the cell pointer to the **Save** button (found at the top of the worksheet) and press [**Enter**], or if you have a mouse, click the **Save** button.
6. Press [**Esc**] to exit the Default Tariff Book Cover Sheet screen.

Tariff Book Default Printout Setup

The Tariff Book Default Printout Setup screen lets you assemble the installation's official tariff book based on the utilities services that the installation purchase, generate and sell. The sheets and computations available for assembling your tariff book, and therefore for printing, are:

POST

- Cover Sheet
- Summary Sheet
- Purchaser Classes
- Electric Power
- Filtered Water
- Unfiltered Water
- Sewage
- Refuse Collection/Disposal
- Firm Natural Gas
- Interruptible Natural Gas
- Liquefied Petroleum Gas (LPG)
- Fuel Oil No. 2
- Fuel Oil No. 6
- Steam
- Hot Water
- Space Cooling
- Space Heating

FAMILY HOUSING

- Electric Power
- Filtered Water
- Sewage
- Refuse Collection/Disposal
- Firm Natural Gas
- Liquefied Petroleum Gas
- Fuel Oil No. 2
- Steam
- Hot Water
- Space Cooling
- Space Heating

TO SETUP YOUR TARIFF BOOK DEFAULT PRINTOUT

1. Press [**F10**] to invoke the UTILRATE for DOS menu system.
2. Press **S** for **Setup**.

3. Press **E** for **dEfault Printout**.
4. The default printout configuration as shipped from our office, shows all the sheets and computations selected. To change this configuration, with the arrow keys navigate the cell pointer to the **Blank** button and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the **Blank** button and press the mouse left button. As an alternate, you can navigate the cell pointer with the arrow keys to each one of the sheets and computations option buttons and press [**↵** **Enter**] to blank a button, or if you have a mouse, click each option button. The option buttons act as toggle switches.
5. Based on the utility services that the installation purchase, generate, and sell, navigate the cell pointer with the arrow keys to each one of those utility services that the installations, purchase, generate, and sell and press [**↵** **Enter**], or if you have a mouse, click each one of the utility services options as applicable¹³. We suggest that the “Cover Sheet,” “Summary Sheet” and the “Purchaser Classes” be always selected as part of your tariff book default printout.

(If you made changes and have not saved them yet, and you decide that you want to revert to the default configuration, press the **Reset** button.)
6. With the arrow keys move the cell pointer to the **Save** button and press [**↵** **Enter**], or if you have a mouse, click the **Save** button. UTILRATE for DOS saves this configuration in your hard disk.
7. Press [**Esc**] to exit the Tariff Book Default Printout screen.

Printer Page Setup

The Printer Page Setup screen allows you to setup the UTILRATE for DOS printer page margins and page length to conform with your printer. To configure the UTILRATE for DOS printer page setup, you will need the PRINTER.TST printout that you generated during the printer configuration. UTILRATE for DOS prints 72 characters times 50 lines per page. To setup the page margins and page length we need to determine how many lines and how many characters do your printer print. Here is where the PRINTER.TST printout becomes handy.

TO CONFIGURE THE PRINTER PAGE SETUP

1. Take the first page of the PRINTER.TST printout, and count the number of lines printed and write the number in the space provided below.

PAGE LENGTH = NUMBER OF LINES PRINTED = _____ Lines

¹³ Make sure that the applicable option buttons are marked with “[X]”.

2. Take the PRINTER.TST printout page where a line (or two lines if the printer wrapped around) of numbers were printed horizontally. Usually, this is the second page printed. Count the number of characters in a line.

NUMBER OF CHARACTERS IN A LINE = _____ Characters

3. Perform the following mathematical operations:

$$\text{LEFT MARGIN} = \frac{\text{NUMBER OF CHARACTERS IN A LINE} - 72}{2}$$

$$\text{LEFT MARGIN} = \frac{\text{_____} - 72}{2} = \frac{\text{_____}}{2} = \text{_____}$$

$$\text{RIGHT MARGIN} = \text{LEFT MARGIN} + 72 = \text{_____}$$

$$\text{TOP MARGIN} = \frac{\text{PAGE LENGTH} - 50 - 6}{2} = \frac{\text{_____}}{2} = \text{_____}$$

$$\text{BOTTOM MARGIN} = \text{TOP MARGIN} = \text{_____}$$

$$\text{PAGE LENGTH} = \text{_____}$$

4. Press **[F10]** to invoke the UTILRATE for DOS menu system.
5. Press **S** for **Setup**.
6. Press **P** for **Printer Page**.
7. With the arrow keys, navigate the cell pointer to each one of the option boxes, or if you have a mouse, click inside each one of the option boxes, type the correspondent margin number or page length as calculated above, and press **[Enter]**.
8. With the arrow keys move the cell pointer to the **Save** button and press **[Enter]**, or if you have a mouse, click the **Save** button.
9. Press **[Esc]** to exit the Printer Page Setup screen.

Video Display Setup

The Video Display Setup screen allows you to set UTILRATE for DOS to conform with your video screen adapter/monitor. The video screen adapters/monitors supported are CGA, EGA, VGA, monochrome, or Hercules display adapter. The use of a color display/monitor adapter is highly recommended since certain color features were incorporated into the program that may not show up in a monochrome, black and white, or Hercules display adapter.

UTILRATE for DOS automatically identifies your video screen adapter/monitor. You need to change this setup configuration only when your computer supports more than one video screen adapter/monitor at the same time. You do not need to change this setup configuration if your computer only supports one video screen adapter/monitor.

TO CHANGE THE VIDEO DISPLAY SETUP CONFIGURATION

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **S** for **Setup**.
3. Press **V** for **Video Display**.
4. Press **C** for **Color**¹⁴, **L** for **LCD/BW**¹⁵, or **M** for **Mono/Herc**¹⁶.

¹⁴ Color video screen adapter/monitor.

¹⁵ Liquid Crystal Diode (LCD) or Black and White (BW) video screen adapter/monitor.

¹⁶ Monochrome or Hercules video screen adapter/monitor.

Chapter 3 - Program Operation

UTILRATE for DOS is an easy program to run. The program can be run by intuition once the end user knows how to navigate through the main menu and the different screens. The main menu is the main interface that provides access to the majority of the program functions and setup and worksheet screens.

This chapter will provide you the instructions necessary for the overall operation of the program. It provides guidance on starting the program, using the HELP system, navigating the program, main menu structure, entering and editing data, creating a new tariff book file, opening a file, saving your work, printing, and exiting the program. It also provides recommendations on how to delete or rename tariff book files.

Please refer to Chapter 4 - Menu Command for a description of the different menu commands, and Chapter 5 - Rates Computations for general guidance on utilities sales rates computations and a description of the different utilities services sales rates computations worksheets included in the program.

If you have any problems understanding or working with UTILRATE for DOS, please feel free to contact Technical Assistance (see Appendix A).

Starting UTILRATE for DOS

Starting from MS-DOS

1. To start the UTILRATE for DOS program under MS-DOS, if you set up the DOS PATH statement in the AUTOEXEC.BAT batch file to contain the subdirectory name where you installed the program and edited the UTILRATE.BAT batch file as recommended in the installation section, at the DOS prompt of any subdirectory, type¹⁷:

UTILRATE

2. Press [**↵** **Enter**].
3. Press [**↵** **Enter**] to acknowledge the UTILRATE for DOS copyright statement.

¹⁷ If you did not set up the DOS PATH statement in the AUTOEXEC.BAT and did not edit the UTILRATE.BAT batch file, first, you need to change to the subdirectory where UTILRATE for DOS was installed before following steps 1 and 2. For example, to start the program, assuming that you are in the C: drive and that the program was installed on the subdirectory D:\UTILRATE, you would type the following at the DOS prompt where [**↵** **Enter**] means to press the **Enter** key:

```
D: [↵ Enter]  
CD \UTILRATE [↵ Enter]  
UTILRATE [↵ Enter]
```

Starting from Microsoft Windows 3.1 or Windows for Workgroups 3.11

1. Assuming that Microsoft Windows is already running, open or select the **UTILRATE for DOS** program group.
2. Double click the **UTILRATE for DOS V.1.0 (B1)** icon.
3. Press [**↵** **Enter**] to acknowledge the UTILRATE for DOS copyright statement.

Starting from Microsoft Windows 95

1. Click the Taskbar **Start** button to open the Start menu and select **Programs**.
2. Select the **UTILRATE for DOS** program group.
3. Select the **UTILRATE for DOS V.1.0 (B1)** program.
4. Press [**↵** **Enter**] to acknowledge the UTILRATE for DOS copyright statement.

Using the HELP System (INOPERATIVE¹⁸)

UTILRATE for DOS provides three levels of online Help assistance.

- *Help Menu* - A Help menu is provided through the main menu. To access the Help menu, press [**F10**] to invoke the main menu and press **H** for **Help**. Select the desired help command by selecting the first capitalized letter of the menu command or by selecting it with the mouse cursor and pressing the mouse left button. A Help window will pop up providing you assistance on the particular Help command that you selected. The pop up Help window may also provide you access to other Help topics.
- *Menu Command Hints* - A menu command hint box pops up next to the highlighted menu command when you invoke, and navigate through, the main menu. The hint box shows a brief description indicating what this particular menu command does.

¹⁸ The UTILRATE for DOS Version 1.0 (Beta 1) HELP system is inoperative. Final Version 1.0 will contain an operational HELP system. If you need help with Version 1.0 (Beta 1), you can consult this user's guide or contact Technical Assistance (see Appendix A).

- *Context Sensitive Help* - You can get online context sensitive Help assistance by pressing [F1]. A Help window pops up providing assistance related to the particular screen that you are working with. The pop up Help window may provide you access to other Help topics.

Figure 3.1 shows the Help window.

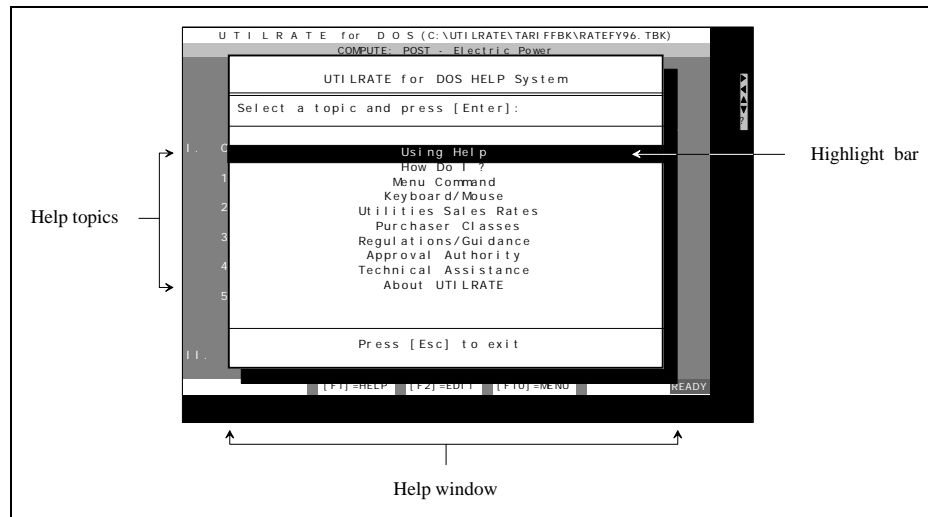


Figure 3.1 - UTILRATE for DOS Help Window.

Figure 3.2 shows a Menu Command Hint when the main menu is invoked and a menu command is highlighted.

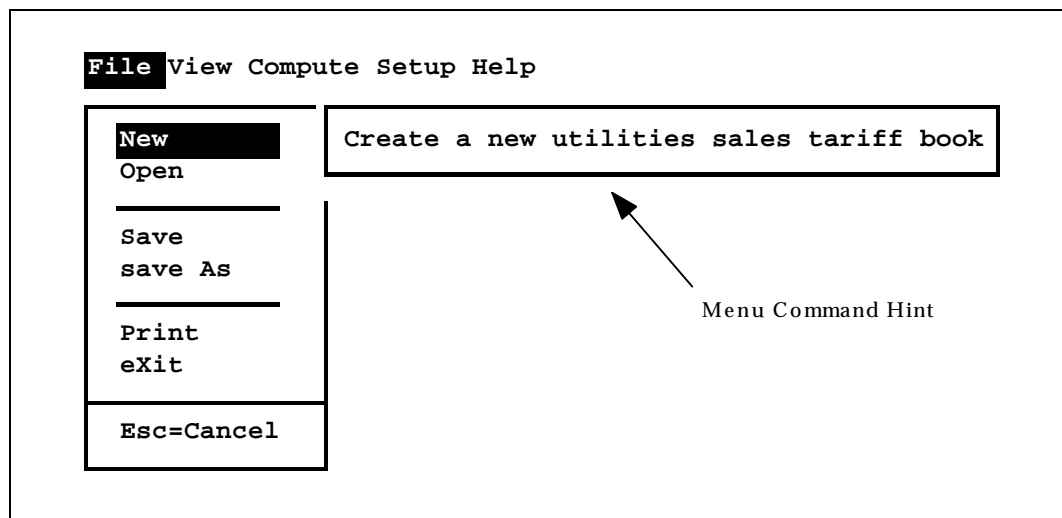


Figure 3.2 - UTILRATE for DOS Menu Command Hint.

Navigating within a Help Window

KEYBOARD

Table 3.1 below shows the keyboard keys that are use to navigate within the pop up Help windows.

[↑]	Move the highlighted bar to the next Help topic selection upward.
[↓]	Move the highlighted bar to the next Help topic selection downward.
[PgUp]	Move to the previous Help page.
[PgDn]	Move to the next Help page..
[↵ Enter]	Jump to the highlighted Help topic page.
[Esc]	Exit the Help system.

Table 3.1 - Help Window Navigational Keys.

MOUSE

If your computer system has a mouse that has been setup to run on MS-DOS programs, you can use the mouse cursor to select Help topics and jumping to the new Help topic page by pressing the mouse left button. In addition, you can exit the Help system by pressing the mouse right button.

UTILRATE for DOS Screen

Figure 3.3 below shows the components of the empty screen that UTILRATE for DOS shows after you started the program and acknowledged the copyright statement.

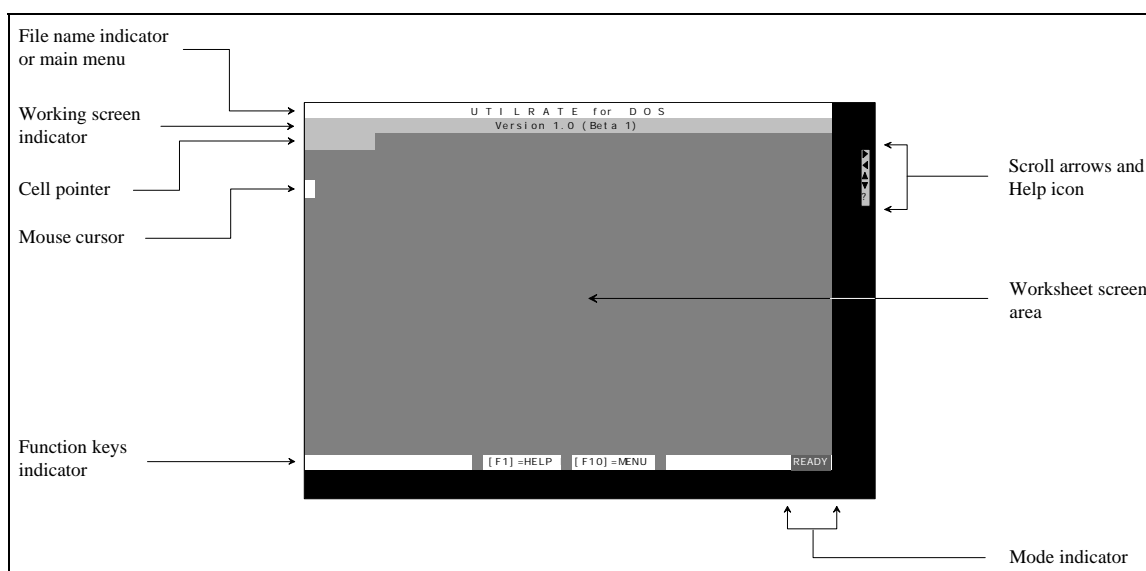


Figure 3.3 - UTILRATE for DOS Empty Screen Components.

Figure 3.4 below shows the components of the UTILRATE for DOS screen containing a utility worksheet.

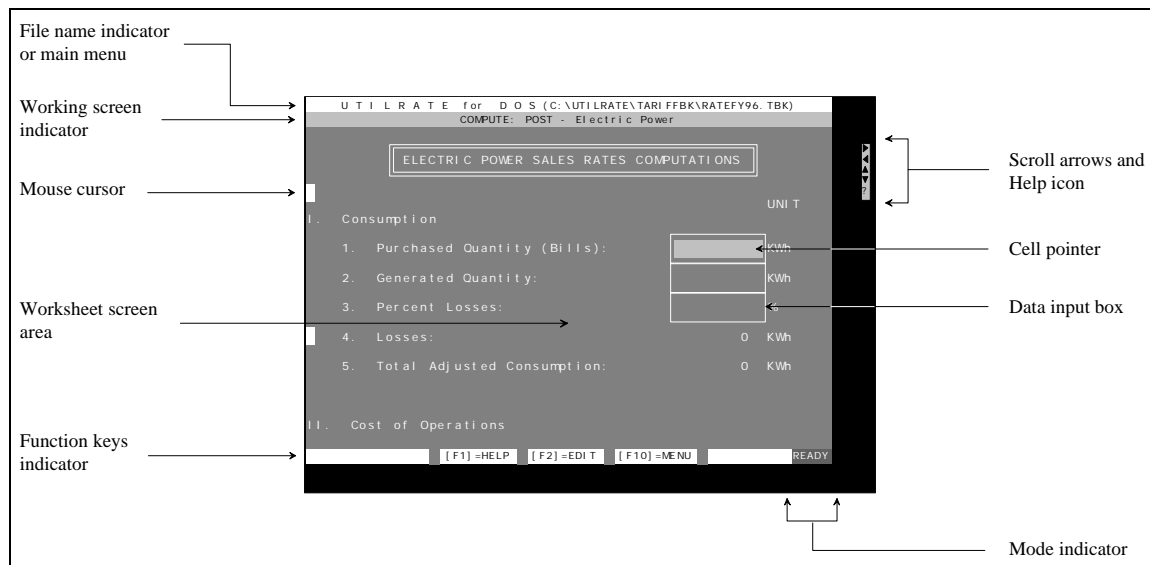


Figure 3.4 - UTILRATE for DOS Screen Components.

The UTILRATE for DOS screen consists of the following:

- **File Name Indicator** - The file name indicator shows the full path filename of the tariff book file that you opened or saved.
- **Main Menu** - The main menu line replaces the file name indicator when you invoke the main menu by pressing **[F10]**.
- **Working Screen Indicator** - The working screen indicator shows the main menu route of the screen that you are working with. For example the figure 3.2 screen shows that the present screen is the post electric power worksheet screen that was invoked through the COMPUTE menu.
- **Cell Pointer** - The cell pointer indicates the worksheet cell or data input box that you are working with. The cell pointer resembles and operates similarly to the cell pointer used in the DOS versions of the Lotus 1-2-3 spreadsheet program.
- **Mouse cursor** - UTILRATE for DOS shows a mouse cursor in the screen if your computer system has a mouse that has been setup to run under DOS programs. You can use the mouse cursor to move the cell pointer from one data input box to another, scroll the cell pointer, select options in the main menu, invoke drilldown worksheets, select buttons and toggle switches and making selections on the pop up Help windows.

- *Function Keys Indicator* - The function keys indicator lines shows the function keys available in a specific screen together with the operation that they perform.
- *Scroll Arrows and HELP Icon* (see figures 3.4 and 3.5) - UTILRATE for DOS shows the scroll arrows and help icon at the upper right corner of your computer screen if your computer system has a mouse that has been setup to run under DOS programs. The scroll arrows and help icon allows you to move or scroll the cell pointer and invoke the HELP¹⁹ window using your computer mouse.
- *Mode Indicator* - The mode indicator shows the mode or state of UTILRATE for DOS.
- *Worksheet Screen Area* - The worksheet screen area is the program interface area where you setup the program, enter data to compute the utilities sales rates, and view the different screens.

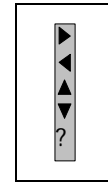


Figure 3.5

Navigation

Mainly there are two ways of navigating through the UTILRATE for DOS main menu and screens, using your computer keyboard and/or the mouse. For certain actions you will find that using the keyboard is easier than the mouse, and for other actions using the mouse is easier or faster. You will find that the best way to navigate through the program is basically using the keyboard and the mouse in combination.

Main Menu

KEYBOARD

To invoke and navigate through the main menu using your computer keyboard, press **[F10]** and select the menu command that you want by pressing the first capitalized letter of the menu command. For example if you want to compute your post electric power service sales rates, you would press **[F10]**, **C** for **Compute**, **P** for **Post**, and **E** for **Electric Power**. Note that if you have a color display/monitor adapter, the first capitalized letter of the menu commands is highlighted. The first capitalized, or highlighted, letter of a menu command works as a “hot” key for command selections. To exit the main menu without invoking any command, press **[Esc]** as many times as needed to close the main menu. Note that every time that you press the **[Esc]** key, you exit one menu level upward.

¹⁹ The UTILRATE for DOS Version 1.0 (Beta 1) HELP system is inoperative. Final Version 1.0 will contain an operational HELP system. If you need help with Version 1.0 (Beta 1), you can consult this user's guide or contact Technical Assistance (see Appendix A).

MOUSE

To invoke and navigate through the main menu using your computer mouse, press **[F10]** and with your mouse cursor select the menu commands that you want and click the mouse left button. To exit the main menu without invoking any commands, press the right button of your mouse as many times as needed to close the main menu. Note that every time that you press the right button of your mouse, you exit one menu level upward.

Screens

KEYBOARD

Table 3.2 shows the keyboard keys that are globally used to navigate the cell pointer in any screens.

[←]	Move the cell pointer one cell to the left.
[→]	Move the cell pointer one cell to the right.
[↑]	Move the cell pointer one cell upward.
[↓]	Move the cell pointer one cell downward.
[PgUp]	Move the cell pointer one screen upward.
[PgDn]	Move the cell pointer one screen downward.
[Home]	Move the cell pointer to the top left cell in a worksheet.
[End],[Home]²⁰	Move the cell pointer to the bottom right cell in a worksheet.

Table 3.2 - Global Navigational Keys.

Please notice that the area shown in the screen may be only a portion of a worksheet. To see the remaining area of any worksheets, scroll down the cell pointer using the arrow key or **[PgDn]** until the screen does not scroll anymore.

MOUSE

To move the cell pointer to another cell or data input box within the area shown in the screens, move the mouse cursor to the new cell or data input box and click the mouse left button. You can also point to any of the scroll arrows icons with your mouse cursor and click the mouse left button. Every time that you click the left button with the mouse cursor pointing to any of the scroll arrows icons, the cell pointer moves one cell in the direction of the arrow icon being pointed on. If you press and hold the left button instead, the cell pointer scrolls toward the direction of the arrow icon. Please notice that the area shown in the screen may be only a portion of a worksheet. To see the remaining area of any worksheets, scroll down the cell pointer by pointing the scroll down arrow

²⁰ Press and release the **[End]** key, then, press and release the **[Home]** key.

icon with the mouse cursor and pressing and holding the mouse left button until the screen does not scroll anymore.

Drilldown Screens

UTILRATE for DOS uses drilldown screen buttons to access other worksheet screens. A good example of this feature is when you want to compute the abnormal maintenance of the majority of the utilities services rates. To access the abnormal maintenance screen, you need to select an applicable drilldown screen button in a data input box. Drilldown screen buttons are shown as green rectangular boxes within data input boxes when using a color video adapter/monitor. A drilldown screen button always shows the total dollar amount of the computation generated in the drilldown screen.

KEYBOARD

To select a drilldown screen button in a data input box, using the arrow keys, move the cell pointer to the drilldown screen button and press [**↵ Enter**]. Immediately, the drilldown screen shows up. Once you are in the new screen, you can use the same navigation keys used to access the main menu or move the cell pointer in a regular screen. To exit the worksheet drilldown screen and go back to the previous worksheet screen, press [**Esc**].

MOUSE

To select a drilldown screen button in a data input box, with the mouse cursor select the drilldown screen button and press the mouse left button. Immediately, the drilldown screen shows up. Once you are in the new screen, you can use the same mouse navigational techniques used to access the main menu or move the cell pointer in a regular screen. To exit the worksheet drilldown screen and go back to the previous worksheet screen, press the mouse right button.

Buttons and Toggle Switches

UTILRATE for DOS uses buttons and toggle switches to perform operations or select available choices in a screen. These are mainly used in the SETUP screens, the PRINT screens, and in some utilities services rates computations worksheets. Similar to the drilldown screen buttons, these are represented by green rectangular boxes when using a color video adapter/monitor.

KEYBOARD

To select a button or toggle switch, using the arrow keys, move the cell pointer to the button or toggle switch and press [**↵ Enter**].

MOUSE

To select a button or toggle switch, with the mouse cursor select the button or toggle switch and press the mouse left button.

Main Menu Structure

The main menu is the primary interface between you the end user and the program. Therefore, it pays to understand its structure thoroughly (see figure 3.6 below). As you are already aware, the UTILRATE for DOS main menu is invoked by pressing [F10].

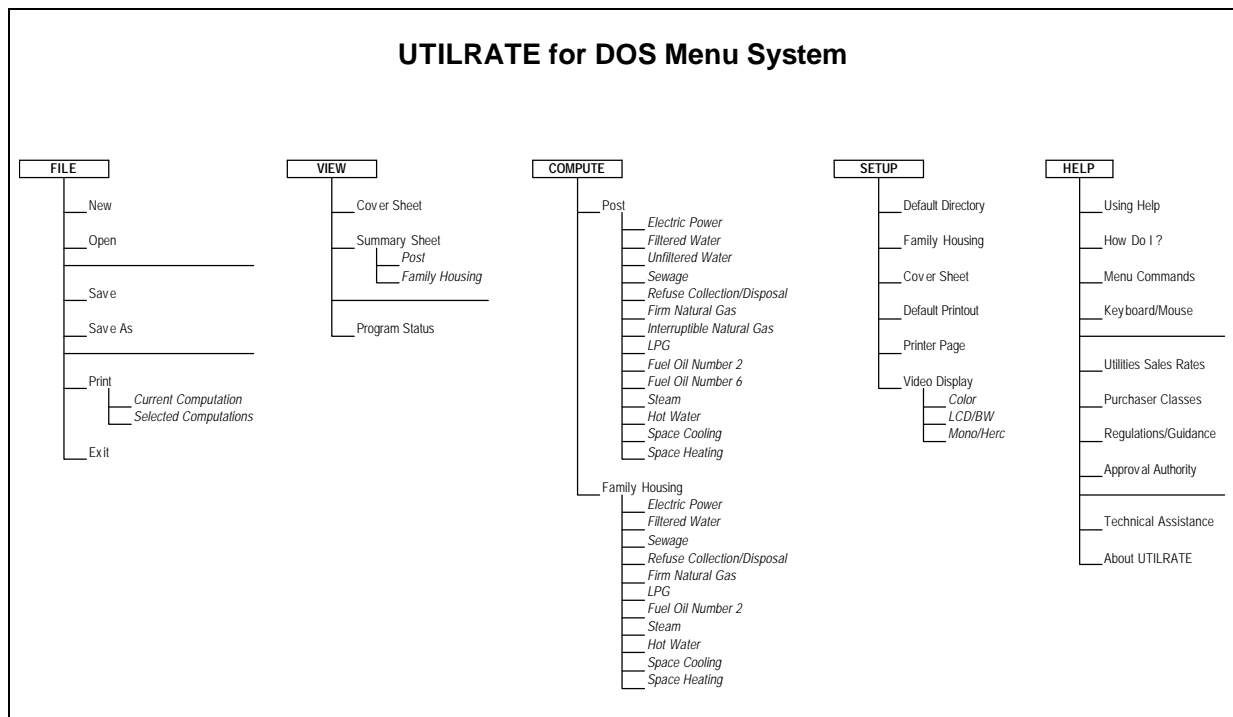


Figure 3.6 - UTILRATE for DOS Main Menu Structure

The main menu consists of the following commands menus:

- **File** - This commands menu allows you to create new, open, save, and print tariff book files. In addition, it allows you to exit the program.
- **View** - This commands menu allows you to view the tariff book cover sheet information, the post and family housing utilities sales rates summaries, and the program status.
- **Compute** - This commands menu allows you to compute your utilities services sales rates for the post as well as for family housing by accessing the different rates computations worksheet screens. It is the most important commands menu in the program.

- **Setup** - This commands menu allows you to setup UTILRATE for DOS to meet your computer system configuration, the utilities sales tariff book cover sheet information, the tariff book printout, and the family housing configuration.
- **Help** - This menu allows you to get help on using the various features of UTILRATE for DOS as well as on the theory of utilities sales. This menu and the context sensitive HELP system are presently inoperative in UTILRATE for DOS Version 1.0 (Beta 1). Final Version 1.0, scheduled for release by the end of December 1996, will contain an operational HELP system. If you need help in the operation of this program, you can consult this user's guide or contact Technical Assistance (see Appendix A).

For obvious reasons, the most important commands menu is the **Compute** menu. The other commands menus (**File**, **View**, **Setup**, and **Help**) provide either program configuration/interface support or support the **Compute** commands menu. When you exit any of the **File**, **View**, **Setup**, or **Help** commands screens, the program returns to the last **Compute** command screen that you invoked.

Entering and Editing Data

UTILRATE for DOS only allows you to enter data within data input boxes. In addition, the program will not allow you to enter alphabetic characters in a data input box that has been setup for numeric characters. Remember that any program is as good as the data that it is entered. Please verify the adequacy and correctness of the data or information that you are entering into the program before officially using the utilities sales tariff book.

To enter data on any screen, navigate the cell pointer inside the data input box (see figure 3.7) where you want to enter data or information. On data input boxes that expand more than one cell pointer width, navigate the cell pointer to the first left cell inside the data input box. Type the information that you want to enter and then press [**Enter**] or navigate the cell pointer upward or downward. If you have not yet pressed [**Enter**] or navigated the cell pointer up or down, and you made an error typing the data, use the [**←**] and [**→**] (left and right arrows) keys to move the character cursor to the character that you want to delete and press [**Delete**]. You can also use the [**← Back Space**] key to delete the character to the left of the

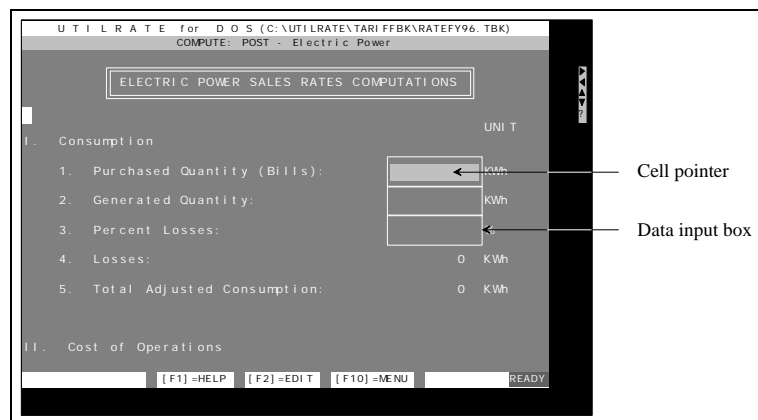


Figure 3.7 - UTILRATE for DOS Data Input Box

character cursor and the **[Insert]** key to type over and replace characters. Type the correct characters. When you finish editing, press **[␣ Enter]** or navigate the cell pointer upward or downward.

To edit data that exist already in a data input box, navigate the cell pointer inside the data input box that you want to edit. On data input boxes that expand more than one cell pointer width, navigate the cell pointer to the first left cell inside the data input box. Press **[F2]** to invoke the EDIT mode. Navigate the character cursor to the character that you want to edit. Use the **[←]**, **[→]**, **[Delete]**, **[← Back Space]**, and **[Insert]** keys to edit your data. If you want to exit the EDIT mode without making any changes, press **[Esc]** or the mouse right button. As an alternate, you can edit your data by starting to type the data again in the input data box without invoking the EDIT mode. The data that you type will replace the data already entered in the input data box.

Creating a New Tariff Book

When you start the program, UTILRATE for DOS automatically creates a new (or blank) tariff book file. You just need to enter data. If you finished working on a tariff book file (do not forget to save the file) and want to create a new tariff book, perform the following steps:

To Create a New (Blank) Tariff Book File

1. Invoke the main menu by pressing **[F10]**.
2. Press **F** for **File**.
3. Press **N** for **New**.
4. Type “Y” to the “Continue with NEW (Have you saved changes?) (Y/N)” prompt and press **[␣ Enter]**. If you forgot to save the tariff book that you were working with, type “N” to the prompt, press **[␣ Enter]** and proceed to save your tariff book file. Once your work is saved, proceed again starting with step 1 above.

CAUTION: Once you answered “Y” to the “Continue with NEW (Have you saved changes?) (Y/N)” prompt and pressed **[␣ Enter]**, your work is lost. You will not be able to retrieve your work unless you had saved it before answering “Y” to the prompt and pressing **[␣ Enter]**.

5. A new blank tariff book file opens. You can start working with the new tariff book file.

Opening a Tariff Book

To open or load a tariff book file from your hard disk (do not forget to save your work before opening a file), perform the following steps:

To Open a Tariff Book File

1. Invoke the main menu by pressing [**F10**].
2. Press **F** for **File**.
3. Press **O** for **Open**.
4. Type “Y” to the “Continue with OPEN (Have you saved changes?) (Y/N)” prompt and press [**Enter**]. If you forgot to save the tariff book that you were working with, type “N” to the prompt, press [**Enter**] and proceed to save your tariff book file. Once your work is saved, proceed again starting with step 1 above.

CAUTION: Once you answered “Y” to the “Continue with OPEN (Have you saved changes?) (Y/N)” prompt and pressed [**Enter**], your work is lost. You will not be able to retrieve your work unless you had saved it before answering “Y” to the prompt and pressing [**Enter**].

5. A file selection window opens (see figure 3.8). Type the tariff book file name that you want to retrieve (as soon as you start typing the filename, the file selection window closes and the prompt “Enter Data File Name” pops up). You do not need to type the file extension. Press [**Enter**]. As an alternate, with the arrow key move the file selector pointer (similar to the cell pointer) to the file that you want to open and press [**Enter**], or move the mouse cursor to the filename of the tariff book file that you want to open and press the mouse left button. If you decide to cancel the **Open** command while the file selection window is opened, press [**Esc**] three times to go back to your working screen.

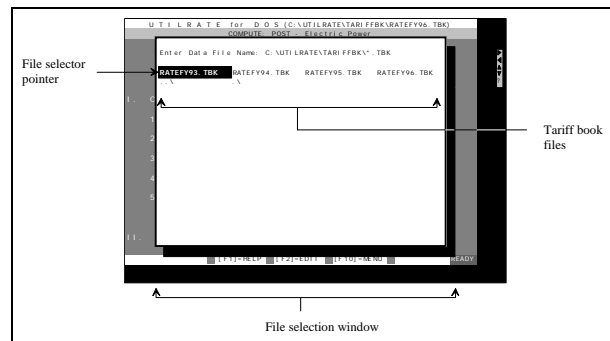


Figure 3.8 - File Selection Window used in Open Command.

6. The tariff book file that you selected is loaded. Please notice that the file name indicator on the UTILRATE for DOS screen shows the filename of the tariff book file that you just opened (loaded). You can start working with the tariff book file.

Saving the Tariff Book

UTILRATE for DOS offers two menu commands under the **File** menu to save your work to your computer hard disk; **Save** and **save As**. For naming a tariff book file, UTILRATE for DOS uses the MS-DOS convention; up to eight characters name plus a three characters extension.

To save your work for the first time or to save your work with a different filename, you use the **save As** command. The **save As** command opens a combination of file selector/prompt window that allows you to save your work with a new filename or select an existing tariff book filename. In the case that you select an existing tariff book filename, UTILRATE for DOS will give you the choice of canceling, replacing or backing-up the file.

To save a tariff book that you previously opened and modified, you use the **Save** command. The **Save** command works as a speed command to save a previously opened or saved file using the same filename. The **Save** command reverts to a **save As** command if you use the **Save** command to save a tariff book file that has not been named (opened or saved) before in the same UTILRATE for DOS working session.

To Save Your Work using the “**save As**” Command

1. Invoke the main menu by pressing [**F10**].
2. Press **F** for **File**.
3. Press **A** for **save As**.
4. A file selection window (similar to the one used in the **Open** command, see figure 3.8 above) opens. Type the filename, up to 8 characters, that you want to give to the tariff book file (as soon as you start typing the filename, the file selection window closes and the prompt “Enter Data File Name” pops up). Do not enter an extension, UTILRATE for DOS automatically add the extension “.TBK”. Press [**Enter**]. Please notice that the file name indicator on the UTILRATE for DOS screen changes showing the new filename. If the file already existed on your disk, a command window pops up giving you the choices of canceling the **save As** command, replacing the file on your disk with your new work, or backing up the existing file on your disk using the extension “.BAK” before saving your new work. Press **C** or [**Esc**] for **Cancel**, **R** for **Replace**, or **B** for **Backup**. (If you decide to cancel the **save As** command, press [**Esc**] three times to go back to your working screen from the file selection window, or two times from the “Enter Data File Name” prompt.)

Or

To save your work using an existing filename, at the file selection window, use the arrow key to move the file selector pointer (similar to the cell pointer) to the file that you want to use and press [**↵** **Enter**], or move the mouse cursor to the desired filename and press the mouse left button. A command window pops up giving you the choices of canceling the **save As** command, replacing the file on your disk with your new work, or backing up the existing file on your disk using the extension “.BAK” before saving your new work. Press **C** or [**Esc**] for **Cancel**, **R** for **Replace**, or **B** for **Backup**. (If you decide to cancel the **save As** command while the file selection window is opened, press [**Esc**] three times to go back to your working screen.)

To Save Your Work using the “Save” Command

1. Invoke the main menu by pressing [**F10**].
2. Press **F** for **File**.
3. Press **S** for **Save**. (The **Save** command reverts to a **save As** command if you are saving a tariff book file that has not been named (saved or opened) before in the same UTILRATE for DOS working session.)

Printing

UTILRATE for DOS has the capability of printing any of the utilities services rates computations worksheets individually. It also generates the official annual utilities sales tariff book including rates summary, rates definitions, and matrices showing the rates applicable to on-post purchasers as well as off-post purchasers. To perform the printing function, the program has two commands under the **Print** command found under the **File** menu; **Current Computation** and **Selected Computations**.

The **Current Computation** command allows you to print the current or active worksheet screen that you are working with. The **Selected Computations** command allows you to print any combination of utilities services sales rates computations worksheets, the rates summary, rates definitions, and the matrices showing the rates applicable to on-post purchasers as well as off-post purchasers. This latest command is also the one that you use to print the official annual utilities sales tariff book.

Before doing any printing, please make sure that the program and the printer have been setup properly in accordance with the “UTILRATE for DOS Setup” section of Chapter 2 - Installation.

To Print the Current Rates Computations Worksheet Screen

1. Make sure that the printer head is aligned and reset at the top of the paper and that the printer is Online and in Ready mode
2. Invoke the main menu by pressing [F10].
3. Press **F** for **File**.
4. Press **P** for **Print**.
5. Press **C** for **Current Computation**.

To Print Selected Computations Worksheets

1. Make sure that the printer head is aligned and reset at the top of the paper and that the printer is Online and in Ready mode.
2. Invoke the main menu by pressing [F10].
3. Press **F** for **File**.
4. Press **P** for **Print**.
5. Press **S** for **Selected Computations**. The Print Selected Computations screen shows up (see figure 3.9).

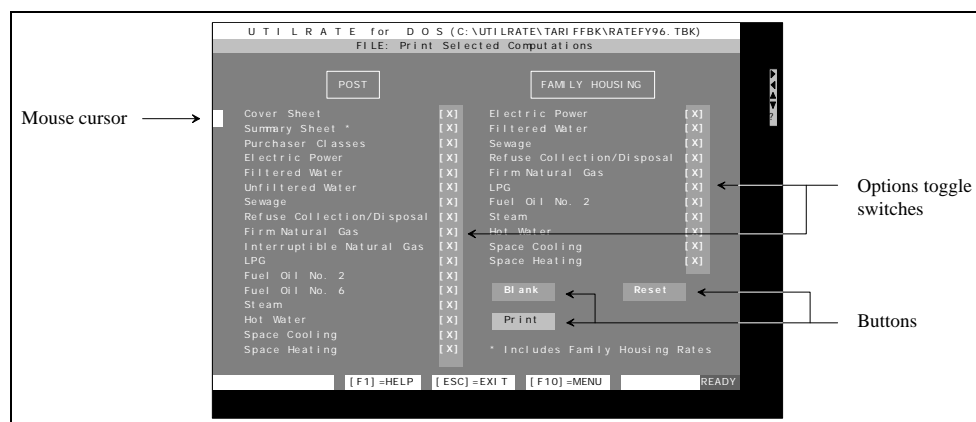


Figure 3.9 - The UTILRATE for DOS Print Selected Computations Window.

6. To blank the current sheets or computations selection, use the arrow keys to navigate the cell pointer to the **Blank** button and press [**Enter**], or if you have a mouse, move the mouse cursor to the **Blank** button and press the mouse left button. Notice that the option buttons act as toggle switches.

7. Select the sheets or utilities computations, any combination, that you want to print by navigating the cell pointer with the arrow keys and pressing [**↵** **Enter**], or if you have a mouse, click the options that you want to print²¹.

NOTE: If you made changes and have not printed them yet, and you decide that you want to revert to the default configuration, press the **Reset** button. Notice that the **Reset** button calls up your tariff book default printout configuration that you setup if you followed the Chapter 1 - Installation instructions.

8. With the arrow keys move the cell pointer to the **Print** button and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the **Print** button and press the mouse left button.
9. Press [**Esc**] to exit the Print Selected Computations screen.

To Print the Official Utilities Sales Tariff Book

1. Make sure that the printer head is aligned and reset at the top of the paper and that the printer is Online and in Ready mode.
2. Invoke the main menu by pressing [**F10**].
3. Press **F** for **File**.
4. Press **P** for **Print**.
5. Press **S** for **Selected Computations**. The Print Selected Computations screen shows up (see figure 3.9 above).
6. To select the official utilities sales tariff book, use the arrow keys to navigate the cell pointer to the **Reset** button and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the **Reset** button and press the mouse left button. Notice that the **Reset** button called up your tariff book default printout configuration that you setup if you followed the Chapter 1 - Installation instructions.
7. With the arrow keys move the cell pointer to the **Print** button and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the **Print** button and press the mouse left button.
8. Press [**Esc**] to exit the Print Selected Computations screen.

²¹ Make sure that the applicable option buttons are marked with “[X]”.

Exiting UTILRATE for DOS

To exit UTILRATE for DOS (do not forget to save your work before exiting), perform the following steps.

To Exit UTILRATE for DOS

1. Invoke the main menu by pressing [**F10**].
2. Press **F** for **File**.
3. Press **X** for **eXit**.
4. Type “Y” to the “Continue with EXIT (Have you saved changes?) (Y/N)” prompt and press [**↵ Enter**]. If you forgot to save the tariff book that you were working with, type “N” to the prompt, press [**↵ Enter**] and proceed to save your tariff book file. Once your work is saved, proceed again starting with step 1 above.

Deleting or Renaming Tariff Book Files

UTILRATE for DOS does not have the capability of deleting or renaming tariff book files stored in your hard disk. If you desire to delete or rename a tariff book file, you will need to use the DOS DELETE (DEL) or the RENAME (REN) command at the DOS prompt. If you are using Microsoft Windows 3.1 or Windows for Workgroups 3.11, you can also use the File Manager to delete or rename a file. In Microsoft Windows 95, use the Explorer.

Chapter 4 - Menu Commands

The main menu is the primary interface between you, the end user, and the program. It consists of 5 sub-menus; **File**, **View**, **Compute**, **Setup**, and **Help**. As you are already aware, the UTILRATE for DOS main menu is invoked by pressing [F10].

This chapter provides a brief description of all the menu commands used in UTILRATE for DOS.

```
File View Compute Setup Help
New
Open
Save
save As
Print
eXit
Esc=Cancel

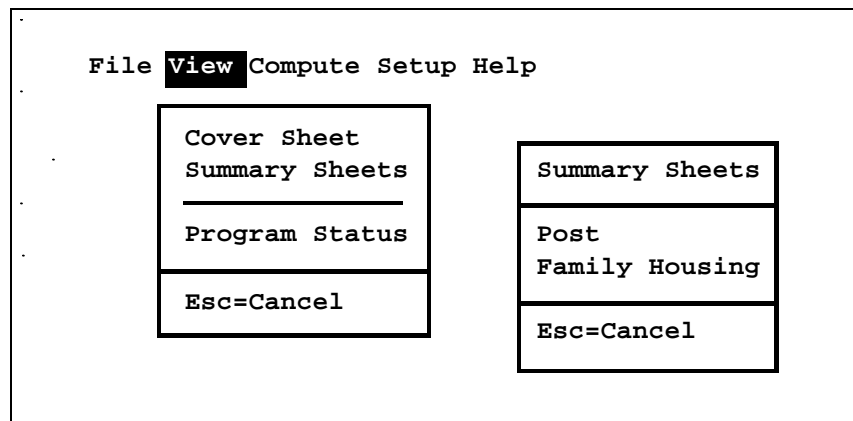
Print
Current Computation
Selected Computations
Esc=Cancel
```

File Commands Menu

The **File** commands menu allows you to create new, open, save, and print tariff book files. In addition, it allows you to exit the program.

- **New** - Creates a new utilities sales rates tariff book with input boxes in blank.
- **Open** - Retrieves an existing utilities sales rates tariff book file from the computer hard disk.
- **Save** - Saves the active utilities sales tariff book into the computer hard disk.

- **save As** - Saves the active utilities sales rates tariff book with a new name into the computer hard disk.
- **Print** - This command allows you to print any of the utilities services rates computations worksheets individually. It also generates the official annual utilities sales tariff book including the rates summary, rates definitions, and matrices showing the rates applicable to on-post purchasers as well as off-post purchasers. To perform the printing function, the program offers two commands under the **File-Print** menu; **Current Computation** and **Selected Computations**.
 - **Current Computations** - Prints the current or active utility sales rates computation worksheet screen that you are working with.
 - **Selected Computations** - Print any combination of utilities services sales rates computations worksheets, the rates summary, rates definitions, and the matrices showing the rates applicable to on-post purchasers as well as off-post purchasers. This command is also the one that you use to print the official annual utilities sales tariff book.
- **eXit** - Exits UTILRATE for DOS.



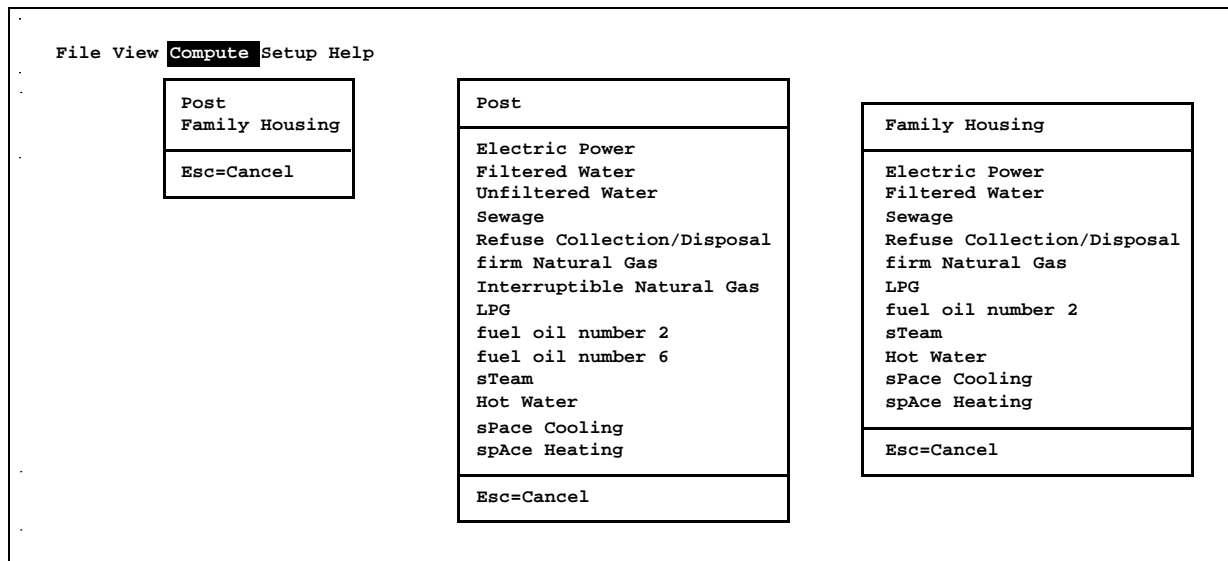
View Commands Menu

The **View** commands menu allows you to view the tariff book cover sheet information and the rates summaries for the post and family housing.

- **Cover Sheet** - Allows you to view the utilities sales tariff book cover sheet information. This view does not allow you to edit the information on the cover sheet.

To edit the cover sheet information, see the “UTILRATE for DOS Setup” section in Chapter 2 - Installation.

- **Summary Sheets** - Allows you to view the post and family housing utilities sales rates summary sheets. To perform the view summary sheets function, the program offers two commands under the **View-Summary Sheets** menu; **Post** and **Family Housing**.
 - **Post** - View the post utilities sales rates summary sheet. This consists of Rate A and Rate B for all the utilities services.
 - **Family Housing** - View the family housing utilities sales rates summary sheet. This shows Rate H for all the utilities services.
- **Program Status** - View the program status, i.e., available memory, math co-processor, recalculation, circular references, and the global configurations. This command is used for Technical Assistance purpose. (The **Program Status** command is similar to the DOS version of Lotus 1-2-3 Worksheet-Status command)



Compute Commands Menu

The **Compute** commands menu allows you to compute your utilities services sales rates for the post as well as for family housing by accessing the different rates computations worksheet screens. It is the most important commands menu in the program. The other commands menus (**File**, **View**, **Setup**, and **Help**) provide either program configuration/ interface support or

support the **Compute** commands menu. When you exit any of the **File**, **View**, **Setup**, or **Help** commands screens, the program returns to the last **Compute** command screen that you invoked.

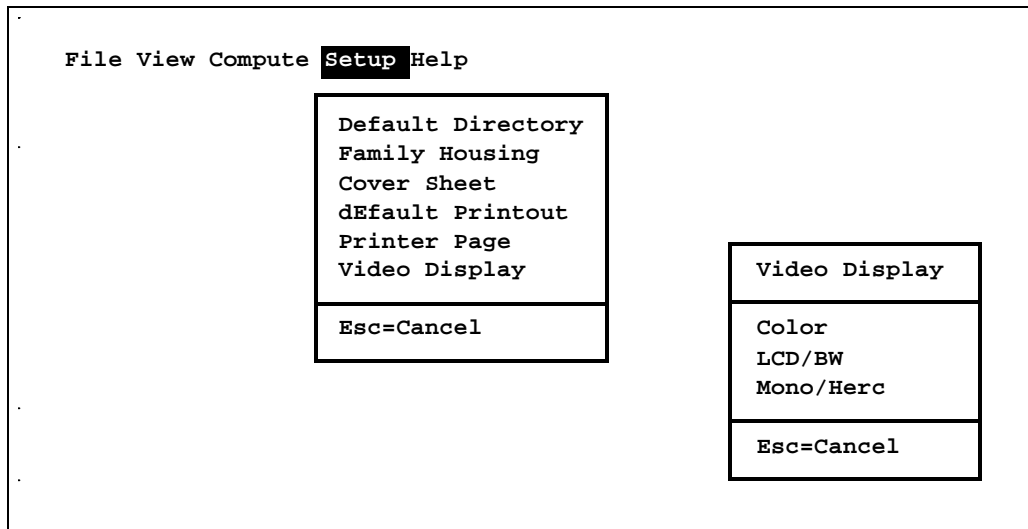
- **Post** - Allows you to compute the post utilities services sales rates. To perform the compute post rates function, the program offers 14 commands under the **Compute-Post** menu; **Electric Power**, **Filtered Water**, **Unfiltered Water**, **Sewage**, **Refuse Collection/Disposal**, **firm Natural Gas**, **Interruptible Natural Gas**, **LPG**, **fuel oil number 2**, **fuel oil number 6**, **sTeam**, **Hot Water**, **sSpace Cooling**, and **spAce Heating**.
 - **Electric Power** - Computes the post electric power service sales rates (Rates A and B). This worksheet screen also has a drilldown worksheet screen to compute the abnormal maintenance cost.
 - **Filtered Water** - Computes the post filtered water service sales rates (Rates A and B). This worksheet screen also has two drilldown worksheet screens to compute the pumping cost and the abnormal maintenance cost.
 - **Unfiltered Water** - Computes the post unfiltered water service sales rates (Rates A and B). This worksheet screen also has two drilldown worksheet screens to compute the pumping cost and the abnormal maintenance cost.
 - **Sewage** - Computes the post sewage service sales rates (Rates A and B). This worksheet screen also has two drilldown worksheet screens to compute the pumping cost and the abnormal maintenance cost.
 - **Refuse Collection/Disposal** - Computes the post refuse collection and/or disposal services sales rates (Rates A and B). This worksheet also has a button to change the default unit labels.
 - **firm Natural Gas** - Computes the post firm natural gas service sales rates (Rates A and B). This worksheet screen also has a button to change the default unit labels and a drilldown worksheet screen to compute the abnormal maintenance cost.
 - **Interruptible Natural Gas** - Computes the post interruptible natural gas service sales rates (Rates A and B). This worksheet screen also has a button

to change the default unit labels and a drilldown worksheet screen to compute the abnormal maintenance cost.

- **LPG** - Computes the post liquefied petroleum gas (LPG) service sales rates (Rates A and B). This worksheet screen also has a button to change the default unit labels and a drilldown worksheet screen to compute the abnormal maintenance cost.
- **fuel oil number 2** - Computes the post fuel oil number 2 service sales rates (Rates A and B). This worksheet screen also has a drilldown worksheet screen to compute the abnormal maintenance cost.
- **fuel oil number 6** - Computes the post fuel oil number 6 service sales rates (Rates A and B). This worksheet screen also has a drilldown worksheet screen to compute the abnormal maintenance cost.
- **sTeam** - Computes the post steam service sales rates (Rates A and B). This worksheet screen also has a button to change the default unit labels and a drilldown worksheet screen to compute the abnormal maintenance cost.
- **Hot Water** - Computes the post hot water service sales rates (Rates A and B). This worksheet screen also has a drilldown worksheet screen to compute the abnormal maintenance cost.
- **sSpace Cooling** - Computes the post space cooling service sales rates (Rates A and B). This worksheet screen also has a button to change the default unit labels and a drilldown worksheet screen to compute the abnormal maintenance cost.
- **spAce Heating** - Computes the post space heating service sales rates (Rates A and B). This worksheet screen also has a button to change the default unit labels and a drilldown worksheet screen to compute the abnormal maintenance cost.
- **Family Housing** - Allows you to compute the family housing utilities services sales rates. Depending on how you setup the UTILRATE for DOS family housing default configuration (see the UTILRATE for DOS Setup section in Chapter 2 - Installation), you may or may not need to enter data into the family housing worksheet screens. To perform the compute family housing rates function, the program offers 11 commands under the **Compute-Family Housing** menu; **Electric Power, Filtered Water, Sewage, Refuse Collection/ Disposal, firm Natural Gas, LPG, fuel oil number 2, sTeam, Hot Water, sSpace Cooling, and spAce Heating.**

- **Electric Power** - Computes the family housing electric power service sales rate (Rate H).
- **Filtered Water** - Computes the family housing filtered water service sales rate (Rate H). Under the family housing default configuration number 1, the worksheet screen also has a drilldown worksheet screen to compute the pumping cost.
- **Sewage** - Computes the family housing sewage service sales rate (Rate H). Under the family housing default configuration number 1, the worksheet screen also has a drilldown worksheet screen to compute the pumping cost.
- **Refuse Collection/Disposal** - Computes the family housing refuse collection and disposal services sales rate (Rate H). Under the family housing default configuration number 1, this worksheet also has a button to change the default unit labels.
- **firm Natural Gas** - Computes the family housing firm natural gas service sales rate (Rate H). Under the family housing default configuration number 1, this worksheet screen also has a button to change the default unit labels.
- **LPG** - Computes the family housing liquefied petroleum gas (LPG) service sales rate (Rate H). Under the family housing default configuration number 1, this worksheet screen also has a button to change the default unit labels.
- **fuel oil number 2** - Computes the family housing fuel oil number 2 service sales rate (Rate H).
- **sTeam** - Computes the family housing steam service sales rate (Rate H). Under the family housing default configuration number 1, this worksheet screen also has a button to change the default unit labels.
- **Hot Water** - Computes the family housing hot water service sales rate (Rate H).
- **sPace Cooling** - Computes the family housing space cooling service sales rate (Rate H). Under the family housing default configuration number 1, this worksheet screen also has a button to change the default unit labels.
- **spAce Heating** - Computes the family housing space heating service sales rate (Rate H). Under the family housing default configuration number 1, this worksheet screen also has a button to change the default unit labels.

Setup Commands Menu

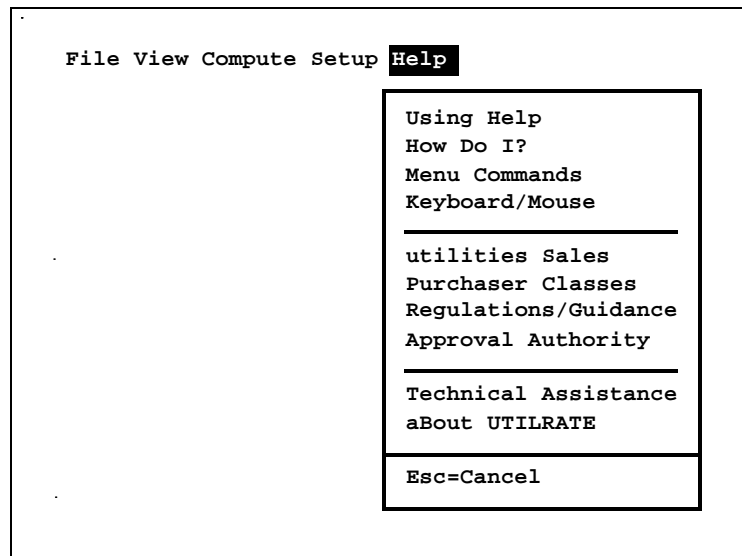


The **Setup** commands menu allows you to setup UTILRATE for DOS to meet your computer system configuration, the utilities sales tariff book cover sheet information, the tariff book printout, and the family housing configuration. A detailed description of the program setup operation was discussed under the “UTILRATE for DOS Setup” section in Chapter 2 - Installation.

- **Default Directory** - Allows you to change the default tariff book data subdirectory, where UTILRATE for DOS saves your tariff book data, to another existing subdirectory as well as creating a new subdirectory before changing to the new subdirectory.
- **Family Housing** - Allows you to setup the family housing default configuration.
- **Cover Sheet** - Allows you to setup the utilities sales tariff book cover sheet information.
- **dEfault Printout** - Allows you to assemble the installations official utilities sales tariff book based on the utilities services that the installation purchase, generate, and sell.
- **Printer Page** - Allows you to setup the UTILRATE for DOS printer page margins and the page length to conform with your printer.

- **Video Display** - Allows you to set UTILRATE for DOS to conform with your video screen adapter/monitor.
 - **Color** - Setups UTILRATE for DOS to conform to a color video screen adapter/monitor.
 - **LCD/BW** - Setups UTILRATE for DOS to conform to a liquid crystal diode (LDC) or black and white (BW) video screen adapter/monitor.
 - **Mono/Herc** - Setups UTILRATE for DOS to conform to a monochrome or Hercules video screen adapter/monitor.

Help Commands Menu



The **Help** commands menu allows you to get help on using the various features of UTILRATE for DOS as well as on the theory of utilities sales. This menu and the context sensitive HELP system are presently inoperative in UTILRATE for DOS Version 1.0 (Beta 1). Final Version 1.0, scheduled for release by the end of December 1996, will contain an operational HELP system. If you need help in the operation of this program, you can consult this user's guide or contact Technical Assistance (see Appendix A).

- **Using Help** - Shows how to use the UTILRATE for DOS HELP system.
- **How Do I?** - Shows how to perform common tasks such as setting up UTILRATE for DOS; creating, opening, saving, and printing new tariff book files; entering and editing data; etc.

- **Menu Commands** - Shows a brief description of all the menu commands used in UTILRATE for DOS.
- **Keyboard/Mouse** - Shows how to use the keyboard and/or the mouse for program navigation.
- **utilities Sales** - Shows general guidance on the sales of utilities services to include rates definitions.
- **Purchaser Classes** - Shows the purchaser classes matrices indicating the rates applicable to on-post and off-post purchasers.
- **Regulations/Guidance** - Shows a list of statutes, regulations, and guidance related to the sale of utilities services.
- **Approval Authority** - Shows a table indicating the utilities sales approval authority based on the purchaser estimated annual cost.
- **Technical Assistance** - Shows the point of contact and instructions to obtain technical assistance on the operation of UTILRATE for DOS.
- **aBout UTILRATE** - Shows the UTILRATE for DOS version number and copyright statement.

Chapter 5 - Rates Computations

This chapter explains the details of entering data and performing rates computations using UTILRATE for DOS and how to assemble the installation's utilities sales tariff book binder. Please refer to Chapter 3 - Program Operation if you need guidance on the overall operation of the program (starting the program, using the HELP system, navigating the program, main menu structure, entering and editing data, creating a new tariff book file, opening a file, saving your work, printing, and exiting the program).

Army's Utilities Sales Rates

The rates generated by UTILRATE for DOS and, therefore, to be used on the sales of utilities services at Army installations are the following:

- *Rate A* - The cost to the Government including operation and maintenance costs plus losses/infiltration in transmission. Generally chargeable to other Federal Government activity; applicable Morale, Welfare, and Recreation (MWR) activities; commissaries; and concessionaires through their reimbursement to the host Non-Appropriated Fund (NAF) organizations.
- *Rate B* - The cost to the Government including operation and maintenance costs, losses/infiltration in transmission, capital charges, and administrative overhead. Generally chargeable to on-post non-Federal Government activities, lessees of industrial facilities, contractors (MCA, OMA, RDT&E), and direct sales concessionaires. Rate B is also chargeable to off-post non-Federal Government activities when it is greater than the local prevailing rate (LPR) applicable to the customer (purchaser) class.
- *Rate H* - The cost to the Government including normal operation and maintenance costs plus losses/infiltration in transmission. The maintenance cost excludes major one-time or non-recurring cost maintenance and repair projects (abnormal maintenance). Rate H is chargeable to Army Family Housing and Government employees renting Government quarters on-post.

Along with the above rates, the Utilities Services/Sales Officer must get acquainted with the nearest utility suppliers tariff books. This is so because the nearest utility suppliers tariff books are what determine the local prevailing rates (LPR), based on the specific customer (purchaser) classification, chargeable to off-post non-Federal Government purchasers. The tariff books of the nearest utility suppliers must be attached to the installation's utilities sales tariff book generated by UTILRATE for DOS. The LPR rate definition is as follows:

- *LPR - Local Prevailing Rate (NOT LISTED)* - The specific customer class rate chargeable to the purchaser by the nearest utility supplier. Generally chargeable to off-post non-Federal Government activities when the rate is greater than Rate B.

Information Required in Advance

Generally, to compute the utilities services sales rates, you will need to gather in advance the following:

- TN 420-41-1 (for reference purposes).
- Government owned utilities generating/distribution facilities directly related costs for the last 12 months (usually fiscal year).
 - Utilities bill records
 - Consumption records
 - Operating cost records
 - Maintenance cost records
 - Real property records
 - Applicable design code manuals or handbooks for estimating consumption (see TN 420-41-1).
- Nearest utility suppliers tariff books for the determination of the applicable LPR.

Rates Computations Worksheets Screens Structure

In general, when you input data to compute the post utility services sales rates, you will be interfacing with two screens: the utility's main worksheet screen and the abnormal maintenance worksheet screen; except for filtered and unfiltered water, sewage, and refuse collection and disposal. When you input data to compute the post filtered water, unfiltered water, and sewage rates, you will be interfacing with three screens: the utility's main worksheet screen, the cost for pumping worksheet screen, and the abnormal maintenance worksheet screen. For refuse collection and disposal, you will be inputting data on only one screen, the utility's main worksheet screen.

If you left the family housing default configuration setup in its default value (configuration no. 1), you do not input data in any of the family housing worksheet screens. This is so because under the default family housing configuration, the program considers family housing being part of the post as a whole. All utilities consumptions and costs information is picked-up by the program from the post utilities rates computations. Therefore, under this configuration, you will be interfacing with the family housing utility main worksheet screens only for viewing purpose.

If you setup the family housing default configuration to configuration no. 2, you will be interfacing basically with one worksheet screen, the family housing utility's main screen, when inputting data for family housing, except for filtered water and the sewage. For computing the family housing filtered water and sewage rates you may need to interface with two screens: the family housing utility's main worksheet screen and its power for pumping screen.

The majority of the rates computations main worksheets follow more or less the same structure. We recommend that you become familiar with all the rates computations main worksheets before you start entering data into the program. For this purpose Appendix D includes a printout of a blank tariff book containing all utilities services main worksheets for the post and family housing, when the program has been set to the family housing default configuration (configuration no. 1). Appendix E contains a blank printout set of the family housing main worksheets when the family housing default configuration has been set to configuration no. 2. Appendix F contains a blank printout of a power for pumping filtered water worksheet. A similar power for pumping worksheet is also used in the power for pumping computations for unfiltered water and sewage. Appendix G has a printout of an abnormal maintenance worksheet. (NOTE: Generally, a worksheet printout resembles the program utility's worksheet screen. There are only two differences: (1) the worksheets printout may contain a header line identifying the specific utility service and a footer line containing the date printed and the page number, and (2) in those utility's worksheet screens that have a unit label button with an instruction, the unit label button and its instruction do not come out in the printout).

The general structure of a utility main worksheet screen consist of the following sections:

- *I. Consumption* - In this section you enter the installation's utility consumption data, purchased or generated, and the losses (infiltration in the case of sewage) in transmission as a percentage.
- *II. Cost of Operation* - In this section you enter the utility purchased cost and the installation's owned utility (generation and/or distribution) system operational cost data. This section may include a drilldown screen button to access the power for pumping worksheet screen.
- *III. Cost of Maintenance* - In this section you enter the installation's owned utility (generation and/or distribution) system maintenance cost data. This section generally includes a drilldown screen button to access the abnormal maintenance worksheet screen.
- *IV. Cost of Capital* - In this section you enter the acquisition cost of the installation's owned utility (generation and/or distribution) system and the annual system capacity.

- **V. Rate Summary** - In this section you do not enter any data. This section shows a summary of the rates to be charged for a particular utility including its components (includes the computation of the administrative overhead cost).

Data Input Flow

There are some utilities rates computations worksheets that use the rates computed in other worksheets. Therefore, you should follow the order of the **Compute** commands menu when entering data. In other words input data in the following worksheets order:

POST

- 1) Electric Power
- 2) Filtered Water
- 3) Unfiltered Water
- 4) Sewage
- 5) Refuse Collection/Disposal
- 6) Firm Natural Gas
- 7) Interruptible Natural Gas
- 8) Liquefied Petroleum Gas
- 9) Fuel Oil No. 2
- 10) Fuel Oil No. 6
- 11) Steam
- 12) Hot Water
- 13) Space Cooling
- 14) Space Heating

FAMILY HOUSING (*only under Family Housing Configuration No. 2*)

- 15) Electric Power
- 16) Filtered Water
- 17) Sewage
- 18) Refuse Collection/Disposal
- 19) Firm Natural Gas
- 20) Liquefied Petroleum Gas
- 21) Fuel Oil No. 2
- 22) Steam
- 23) Hot Water
- 24) Space Cooling
- 25) Space Heating

Computing the Utilities Services Sales Rates

To compute the utilities services sales rates using UTILRATE for DOS, you start by setting up the tariff book cover sheet information for the effective period that the rates will be applicable. You will do this using the **Setup-Cover Sheet** command in the main menu. Thereafter you begin inputting data on the data input boxes through the utilities worksheets screens using the **Compute-Post** commands and the **Compute-Family Housing** commands.

Remember to access the main menu with the [F10] key. Notice that the screen may show only a portion of the information contained in a worksheet. Always press the [PgDn] key to see the remainder of the worksheet until the cell pointer does not move any longer.

Setting Up the Tariff Book Cover Sheet Information

The procedures to set up the tariff book cover sheet information when you create a new utilities sales tariff book depend on whether or not you setup the default tariff book cover sheet information as explained in the UTILRATE for DOS Setup section back in Chapter 2 - Installation. We have included the procedures for both cases. Please refer to the procedures that apply to your case.

To Set up the Tariff Book Cover Sheet Information with a Prior Default Tariff Book Cover Sheet Information Setup

1. Press [F10] to invoke the UTILRATE for DOS menu system.
2. Press **S** for **Setup**.
3. Press **C** for **Cover Sheet**.
4. Navigate the cell pointer with the arrow keys to the **Retrieve** button (found at the top of the worksheet) and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor over the **Retrieve** button and select it by clicking the mouse left button. Notice that the information that you entered and saved when you initially setup the default tariff book cover sheet information back in Chapter 2 pops up and filled the data input boxes.
5. Make any appropriate changes to any of the information contained in the data input boxes to include the **EFFECTIVE PERIOD** block, by navigating the cell pointer with the arrow keys and place it on the first left cell inside the data input box in question, or if you have a mouse, click the first left cell inside the box. Type or edit²² the information and press [**↵** **Enter**]. To access the remainder of the worksheet area, press [PgDn]. The following are the

²² To edit the information in any of the information boxes, press [F2] to invoke the EDIT mode. When you finish editing, press [**↵** **Enter**]

instructions for each data input box line.

INSTALLATION'S NAME: *Data Input Box.* Enter the name of the installation (up to 44 alphanumeric characters).

EFFECTIVE PERIOD: *Data Input Boxes.* Enter the effective period in which the rates to be computed will apply. You only need to fill one of the three data input boxes in this block. UTILRATE for DOS allows you to enter the fiscal year (FY) and the calendar year (CY) information on the EFFECTIVE PERIOD block by using up to 4 numeric digits. To enter a period in the OTHER period data input box, you must enter it using the format: MMM YY - MMM YY, e.g., Jan 96 - Dec 96.

DPW' NAME: *Data Input Box.* Enter the name of the Director of Public Works (DPW) (up to 28 alphanumeric characters).

USSO'S NAME: *Data Input Box.* Enter the name of the Utilities Services/Sales Officer (USSO) (up to 28 alphanumeric characters).

USSO'S TELEPHONE NUMBERS: *Data Input Boxes.* Enter the Utilities Services/Sales Officer's (USSO'S) Defense Switched Network (DSN), commercial (COMM), and commercial FAX telephone numbers in the correspondent data input boxes.

USSO'S ADDRESS: *Data Input Boxes.* Enter the Utilities Services/Sales Officer's (USSO'S) address (up to 5 lines, 44 alphanumeric characters per line).

6. Optional. We recommend that you save this new cover sheet information if you plan to use basically the same information to create new utilities sales tariff books in the future. To save the new information for future use, with the arrow keys move the cell pointer to the **Save** button (found at the top of the worksheet) and press [**Enter**], or if you have a mouse, click the **Save** button.
7. Press [**Esc**] to exit the Default Tariff Book Cover Sheet screen.

To Set up the Tariff Book Cover Sheet Information with NO Prior Default Tariff Book Cover Sheet Information Setup

1. Press [**F10**] to invoke the UTILRATE for DOS menu system.
2. Press **S** for **Setup**.

3. Press **C** for **Cover Sheet**.
4. Navigate the cell pointer with the arrow keys and place it on the first left cell inside the data input box, or if you have a mouse, click the first left cell inside the box, of the data input box where you want to enter the information. Type the information and press [**↵** **Enter**]. To access the remainder of the worksheet area, press [**PgDn**]. The following are the instructions for each data input box line.

INSTALLATION'S NAME : *Data Input Box.* Enter the name of the installation (up to 44 alphanumeric characters).

EFFECTIVE PERIOD : *Data Input Boxes.* Enter the effective period in which the rates to be computed will apply. You only need to fill one of the three data input boxes in this block. UTILRATE for DOS allows you to enter the fiscal year (FY) and the calendar year (CY) information on the EFFECTIVE PERIOD block by using up to 4 numeric digits. To enter a period in the OTHER period data input box, you must enter it using the format: MMM YY - MMM YY, e.g., Jan 96 - Dec 96.

DPW' NAME : *Data Input Box.* Enter the name of the Director of Public Works (DPW) (up to 28 alphanumeric characters).

USSO'S NAME : *Data Input Box.* Enter the name of the Utilities Services/Sales Officer (USSO) (up to 28 alphanumeric characters).

USSO'S TELEPHONE NUMBERS : *Data Input Boxes.* Enter the Utilities Services/Sales Officer's (USSO'S) Defense Switched Network (DSN), commercial (COMM), and commercial FAX telephone numbers in the correspondent data input boxes.

USSO'S ADDRESS : *Data Input Boxes.* Enter the Utilities Services/Sales Officer's (USSO'S) address (up to 5 lines, 44 alphanumeric characters per line).

5. Optional. We recommend that you save this new cover sheet information if you plan to use basically the same information to create new utilities sales tariff books in the future. To save the new information for future use, with the arrow keys move the cell pointer to the **Save** button (found at the top of the worksheet) and press [**↵** **Enter**], or if you have a mouse, click the **Save** button.
6. Press [**Esc**] to exit the Default Tariff Book Cover Sheet screen.

Computing the Post Rates

UTILRATE for DOS generates rates computations for 14 post utilities: electric power, filtered water, unfiltered water, sewage, refuse collection/disposal, firm natural gas, interruptible natural gas, liquefied petroleum gas (LPG), fuel oil no. 2, fuel oil no. 6, steam, hot water, space cooling, and space heating. The rates for the first 12 utilities are based on consumption, and the last 2 are based on space area or volume.

When an installation purchases or generates a particular utility in different forms (like in the case of filtered and unfiltered water, or firm and interruptible natural gas, or fuel oil numbers 2 and 6) and mix them up for distribution to all purchasers, the installation may opt to input all the utility forms data, for a particular utility, into one worksheet. For example, if the installation purchases firm and interruptible natural gas and they distribute both natural gas services to all purchasers on a firm basis using the same distribution lines, the installation may add the consumption and costs data of both services and enter these data into the program's firm natural gas worksheet only, disregarding the program's interruptible natural gas worksheet.

If a particular data input box is not applicable, you have the option of entering zero (0) or leaving the data input box in blank. UTILRATE for DOS treats blank data input boxes as zero. We recommend that you enter zero (0) in data input boxes that are not applicable, since this will indicate that these particular data input boxes lines are not applicable, minimizing the possibility of oversights.

Post Electric Power Sales Rates

TO COMPUTE THE POST ELECTRIC POWER SALES RATES

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **E** for **Electric Power**. Notice that the cell pointer is inside the "1. Purchased Quantity (Bills):" data input box.
5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**Enter**]. To access the remainder of the worksheet area, press [**PgDn**].
6. To access the post electric power abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the "2. Abnormal Maintenance Cost:" drilldown screen button data input box and press

[**Enter**], or if you have a mouse, move the mouse cursor to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 5 above, except that you do not need to press [**PgDn**] to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press [**Esc**], or if you have a mouse, click the right mouse button.

POST ELECTRIC POWER SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post electric power sales rates computations main worksheet screen.

I. Consumption

1. **Purchased Quantity (Bills):** *Data Input Box.* If the installation purchased the electric power, enter the post electric power total purchased quantity, in kilowatt-hours (KWh), for the last 12 months.

2. **Generated Quantity:** *Data Input Box.* If the installation generated its own electric power, enter the post electric power total generated quantity, in kilowatt-hours (KWh), for the last 12 months.

3. **Percent Losses:** *Data Input Box.* Enter the percentage that represents the post electric power system transmission losses. You may estimate the system percent losses to 5% (based on 1% for substations, 2% for lines, and 2% for distribution transformers). These percentages may be revised to reflect more closely your system.

4. **Losses:** Indicates the kilowatt-hours (KWh) quantity from the post electric power total consumption (purchased and generated) that is considered as transmission losses.

5. **Total Adjusted Consumption:** Indicates the post electric power total consumption in kilowatt-hours (KWh) adjusted for losses in transmission.

II. Cost of Operation

1. **Purchase Cost (Bill):** *Data Input Box.* If the installation purchased the electric power, enter the post electric power total purchased cost in

dollars (\$) for the last 12 months.

2. Generating Plant Operation Cost: *Data Input Box.* If the installation generated its own electric power, enter the post electric power total operation cost in dollars (\$), related to the generating plant, for the last 12 months.

3. Distribution System Operation Cost: *Data Input Box.* Enter the post electric power total operation cost in dollars (\$), related to the electric power distribution system, for the last 12 months.

4. Total Cost of Operation: Indicates the post electric power total cost of operation in dollars (\$).

5. Unit Cost of Operation: Indicates the post electric power unit cost of operation in dollars (\$) per kilowatt-hour (KWh).

III. Cost of Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned post electric power system (generation and/or distribution) total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Abnormal Maintenance Cost: *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post electric power abnormal (non-recurrent) maintenance worksheet screen. It indicates the post electric power total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Electric Power Sales Rates Abnormal Maintenance Worksheet Screen Instructions/ Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter the post electric power system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post electric power total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post electric power unit cost of maintenance in dollars (\$) per kilowatt-hour (KWh).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.*

Using the installation real property records, enter the post electric power system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation's official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post electric power total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post electric power system present acquisition cost.

3. Estimated Annual Peak Demand: *Data Input Box.* Enter the post electric power system (generation and/or distribution) annual peak demand in kilowatts (KW). When the annual peak demand is appreciably less than the design system capacity (less than 50%), you should consider using the substations capacity to determine the system estimated annual peak demand. Briefly document any such variations and attach a copy of the explanatory document to the installation's official utilities sales tariff book.

4. Annual System Capacity: Indicates the post electric power annual system capacity in kilowatt-hours (KWh).

5. Unit Cost of Capital: Indicates the post electric power unit cost of capital in dollars (\$) per kilowatt-hour (KWh) to be included into Rate B. This is based on the annual capital charge and the annual system capacity.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post electric power rates unit cost of operation component in dollars (\$) per kilowatt-hour (KWh).

2. Unit Cost of Maintenance: Indicates the post electric power rates unit cost of maintenance component in dollars (\$) per kilowatt-hour (KWh).

3. RATE A UNIT CHARGE: Indicates the post electric power Rate A unit charge in dollars (\$) per kilowatt-hour (KWh).

4. Unit Cost of Capital: Indicates the post electric power Rate B unit cost of capital component in dollars (\$) per kilowatt-hour (KWh).

5. Subtotal: Indicates the sum of the Rate A unit charge and the unit cost of capital in dollars (\$) per kilowatt-hour (KWh).

6. Administrative Overhead Cost: Indicates the post electric power Rate B administrative overhead cost component in dollars (\$) per kilowatt-hour (KWh). This is fixed at 3% of the sum of the Rate A unit charge and the unit cost of capital.

7. RATE B UNIT CHARGE: Indicates the post electric power Rate B unit charge in dollars (\$) per kilowatt-hour (KWh).

8. ELECTRIC POWER RATE FOR PUMPING WATER AND SEWAGE, STEAM, HOT WATER, SPACE COOLING, AND SPACE HEATING (Rate A Unit Charge): Indicate the post electric power rate in dollars (\$) per kilowatt-hour (KWh) applicable to other utility services rates computations.

POST ELECTRIC POWER SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the electric power sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost *Table.* This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post electric power sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box).* Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.
- **Amortization Year 1 2 3 4 5** *Toggle Switch Buttons.* Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**Enter**], or if you have a mouse, click the toggle switch

button cell. Notice that an “X” shows up on the cell. If you select the same cell again, the “X” disappears.

- **Project Total Cost Data Input Column (Box).** Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.
- **Amortized Project Cost Column.** Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post electric power sales rates main worksheet screen.

Post Filtered Water Sales Rates

TO COMPUTE THE POST FILTERED WATER SALES RATES

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **F** for **Filtered Water**. Notice that the cell pointer is inside the “1. Purchased Quantity (Bills):” data input box.
5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press **[↵ Enter]**. To access the remainder of the worksheet area, press **[PgDn]**.
6. To access the cost of pumping filtered water worksheet screen, move the cell pointer with the arrow keys to the “4. Pumping Cost:” drilldown screen button data input box and press **[↵ Enter]**, or if you have a mouse, move the mouse cursor to the “4. Pumping Cost:” drilldown screen

button data input box and click the left mouse button. To navigate and enter data in the cost for pumping filtered water worksheet screen, follow the same procedures stated in step 5 above. To exit the cost for pumping filtered water worksheet screen and go back to the main worksheet screen, press **[Esc]**, or if you have a mouse, click the right mouse button.

7. To access the post filtered water abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and press **[Enter]**, or if you have a mouse, move the mouse cursor to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 5 above, except that you do not need to press **[PgDn]** to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press **[Esc]**, or if you have a mouse, click the right mouse button.

POST FILTERED WATER SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post filtered water sales rates computations main worksheet screen.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* If the installation purchased the filtered water, enter the post filtered water total purchased quantity, in kilogallons (KGal), for the last 12 months.

2. Produced Quantity: *Data Input Box.* If the installation produced (processed) its own filtered water, enter the post filtered water total produced quantity, in kilogallons (KGal), for the last 12 months.

3. Percent Losses: *Data Input Box.* Enter the percentage that represents the post filtered water system transmission losses. Normal losses may be estimated at 5%. This percentage may be revised to reflect more closely your system.

4. Losses: Indicates the kilogallons (KGal) quantity from the post filtered water total consumption (purchased and produced) that is considered as transmission losses.

5. Total Adjusted Consumption: Indicates the post filtered water total consumption in kilogallons (KGal) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* If the installation purchased the filtered water, enter the post filtered water total purchased cost in dollars (\$) for the last 12 months.

2. Production Cost: *Data Input Box.* If the installation produced (processed) its own filtered water, enter the post filtered water total operation cost in dollars (\$), related to the production (process) plant, for the last 12 months. Include all labor, material, and supply costs used in operating the water facilities (wells, treatment plants, etc.). Do not include the electricity used for pumping.

3. Distribution System Operation Cost: *Data Input Box.* Enter the post filtered water total operation cost in dollars (\$), related to the filtered water distribution system, for the last 12 months.

4. Pumping Cost: *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post cost for pumping filtered water worksheet screen. It indicates the post electric power cost for pumping filtered water in dollars (\$) to be included into the rates as computed in the cost for pumping filtered water worksheet screen. See the “Cost of Pumping Filtered Water Worksheet Screen Instructions/ Description” section below for the instructions on entering the pumping cost data.

5. Total Cost of Operation: Indicates the post filtered water total cost of operation in dollars (\$).

6. Unit Cost of Operation: Indicates the post filtered water unit cost of operation in dollars (\$) per kilogallon (KGal).

III. Cost of Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned post filtered water system (production and/or distribution) total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Abnormal Maintenance Cost: *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post filtered water abnormal (non-recurrent) maintenance worksheet screen. It indicates the post filtered water total abnormal maintenance cost in dollars (\$) to be phased-in into

the rates as computed in the abnormal maintenance worksheet screen. See the “Post Filtered water Sales Rates Abnormal Maintenance Worksheet Screen Instructions/ Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter the post filtered water system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post filtered water total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post filtered water unit cost of maintenance in dollars (\$) per kilogallon (KGal).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.* Using the installation real property records, enter the post filtered water system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation’s official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post filtered water total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post filtered water system present acquisition cost.

3. Daily System Capacity: *Data Input Box.* Enter the post filtered water system (generation and/or distribution) daily system capacity in gallons per day (GPD).

4. Annual System Capacity: Indicates the post filtered water annual system capacity in kilogallons (KGal).

5. Unit Cost of Capital: Indicates the post filtered water unit cost of capital in dollars (\$) per kilogallon (KGal) to be included into Rate B. This is based on the annual capital charge and the annual system capacity.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post filtered water rates unit cost of operation component in dollars (\$) per kilogallon (KGal).

2. Unit Cost of Maintenance: Indicates the post filtered water rates unit cost of maintenance component in dollars (\$) per kilogallon (KGal).

3. RATE A UNIT CHARGE: Indicates the post filtered water Rate A unit charge in dollars (\$) per kilogallon (KGal).

4. Unit Cost of Capital: Indicates the post filtered water Rate B unit cost of capital component in dollars (\$) per kilogallon (KGal).

5. Subtotal: Indicates the sum of the Rate A unit charge and the unit cost of capital in dollars (\$) per kilogallon (KGal).

6. Administrative Overhead Cost: Indicates the post filtered water Rate B administrative overhead cost component in dollars (\$) per kilogallon (KGal). This is fixed at 3% of the sum of the Rate A unit charge and the unit cost of capital.

7. RATE B UNIT CHARGE: Indicates the post filtered water Rate B unit charge in dollars (\$) per kilogallon (KGal).

8. WATER RATE FOR STEAM, HOT WATER, SPACE COOLING, AND SPACE HEATING (Rate A Unit Charge): Indicate the post water rate in dollars (\$) per kilogallon (KGal) applicable to other utility services rates computations.

COST OF PUMPING FILTERED WATER WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

1. Electric Consumption

a. Metered *Data Input Box.* Enter the electric power total consumption quantity in kilowatt-hours (KWh) used by metered pumps for the last 12 months.

b. Unmetered Indicates the electric power total estimated usage (consumption) in kilowatt-hours (KWh) used by unmetered pumps for the last 12 months as computed in the “4. Estimated Usage for Unmetered Pumps:” block that follows.

c. Total Indicates the total electric power consumption in kilowatt-hours (KWh), metered and unmetered, used for pumping the post filtered water for the last 12 months.

2. Electric Power Rate for Pumping Indicates the current post electric power sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post electric power sales rates main worksheet computations.

3. TOTAL COST OF PUMPING FILTERED WATER Indicates the total post electric power cost for pumping filtered water in dollars (\$). This dollar amount also appears in the “4. Pumping Cost:” drilldown screen button data input box found at the post filtered water sales rates main worksheet screen.

4. Estimated Usage for Unmetered Pumps: This block allows you to estimate the electric power consumption of up to 50 pumps (pump blocks a through ax). UTILRATE for DOS assumes a 65% pump efficiency in the formula to estimate the electric power consumption. This formula is shown at the bottom of the cost of pumping filtered water worksheet.

a. Pump (No.____/Location) *Data Input Box.* Enter a unique pump identifier or location (up to 16 alphanumeric characters) for the specific pump that you want to estimate the electric power consumption.

1. Average Pumping Head *Data Input Box.* Enter the average pumping head in feet (Ft) applicable to the specific pump that you want to estimate the electric power consumption.

2. Pumping Rate *Data Input Box.* Enter the pumping rate in gallons per minute (GPM) applicable to the specific pump that you want to estimate the electric power consumption.

3. Annual Hours of Use *Data Input Box.* Enter the period of time in hours (Hrs) that the specific pump was operational during the last 12 months.

4. Total KWh Consumed Indicates the total electric power in kilowatt-hours (KWh) consumed by the specific pump.

POST FILTERED WATER SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's

judgment, will not abnormally vary (or impact) the filtered water sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost Table. This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post filtered water sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number Data Input Column (Box).** Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.
- **Amortization Year 1 2 3 4 5 Toggle Switch Buttons.** Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**Enter**], or if you have a mouse, click the toggle switch button cell. Notice that an "X" shows up on the cell. If you select the same cell again, the "X" disappears.
- **Project Total Cost Data Input Column (Box).** Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.
- **Amortized Project Cost Column.** Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the "2. Abnormal Maintenance Cost:" drilldown screen button data input box found at the post filtered water sales rates main worksheet screen.

Post Unfiltered Water Sales Rates

TO COMPUTE THE POST UNFILTERED WATER SALES RATES

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **U** for **Unfiltered Water**. Notice that the cell pointer is inside the "1. Purchased Quantity (Bills):" data input box.
5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵ Enter**]. To access the remainder of the worksheet area, press [**PgDn**].
6. To access the cost of pumping unfiltered water worksheet screen, move the cell pointer with the arrow keys to the "4. Pumping Cost:" drilldown screen button data input box and press [**↵ Enter**], or if you have a mouse, move the mouse cursor to the "4. Pumping Cost:" drilldown screen button data input box and click the left mouse button. To navigate and enter data in the cost for pumping unfiltered water worksheet screen, follow the same procedures stated in step 5 above. To exit the cost for pumping unfiltered water worksheet screen and go back to the main worksheet screen, press [**Esc**], or if you have a mouse, click the right mouse button.
7. To access the post unfiltered water abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the "2. Abnormal Maintenance Cost:" drilldown screen button data input box and press [**↵ Enter**], or if you have a mouse, move the mouse cursor to the "2. Abnormal Maintenance Cost:" drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 5 above, except that you do not need to press [**PgDn**] to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press [**Esc**], or if you have a mouse, click the right mouse button.

POST UNFILTERED WATER SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post unfiltered water sales rates computations main worksheet screen.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* If the installation purchased the unfiltered water, enter the post unfiltered water total purchased quantity, in kilogallons (KGal), for the last 12 months.

2. Produced Quantity: *Data Input Box.* If the installation produced its own unfiltered water, enter the post unfiltered water total produced quantity, in kilogallons (KGal), for the last 12 months.

3. Percent Losses: *Data Input Box.* Enter the percentage that represents the post unfiltered water system transmission losses. Normal losses may be estimated at 5%. This percentage may be revised to reflect more closely your system.

4. Losses: Indicates the kilogallons (KGal) quantity from the post unfiltered water total consumption (purchased and produced) that is considered as transmission losses.

5. Total Adjusted Consumption: Indicates the post unfiltered water total consumption in kilogallons (KGal) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* If the installation purchased the unfiltered water, enter the post unfiltered water total purchased cost in dollars (\$) for the last 12 months.

2. Production Cost: *Data Input Box.* If the installation produced its own unfiltered water, enter the post unfiltered water total operation cost in dollars (\$), related to the production plant, for the last 12 months. Include all labor, material, and supply costs used in operating the water facilities (wells). Do not include the electricity used for pumping.

3. Distribution System Operation Cost: *Data Input Box.* Enter the post unfiltered water total operation cost in dollars (\$), related to the unfiltered water distribution system, for the last 12 months.

4. Pumping Cost: *Drilldown Screen Button Data Input Box.*

When this button is selected, it accesses the post cost for pumping unfiltered water worksheet screen. It indicates the post electric power cost for pumping unfiltered water in dollars (\$) to be included into the rates as computed in the cost for pumping unfiltered water worksheet screen. See the “Cost of Pumping Unfiltered Water Worksheet Screen Instructions/ Description” section below for the instructions on entering the pumping cost data.

5. Total Cost of Operation: Indicates the post unfiltered

water total cost of operation in dollars (\$).

6. Unit Cost of Operation: Indicates the post unfiltered

water unit cost of operation in dollars (\$) per kilogallon (KGal).

III. Cost of Maintenance**1. Normal Maintenance Cost:** *Data Input Box.* Enter the

installations owned post unfiltered water system (production and/or distribution) total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Abnormal Maintenance Cost: *Drilldown Screen Button*

Data Input Box. When this button is selected, it accesses the post unfiltered water abnormal (non-recurrent) maintenance worksheet screen. It indicates the post unfiltered water total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Unfiltered water Sales Rates Abnormal Maintenance Worksheet Screen Instructions/ Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter

the post unfiltered water system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post

unfiltered water total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post unfiltered

water unit cost of maintenance in dollars (\$) per kilogallon (KGal).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.*

Using the installation real property records, enter the post unfiltered water system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation's official utilities sales tariff book.

2. Annual Capital Charge:

Indicates the post unfiltered water total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post unfiltered water system present acquisition cost.

3. Daily System Capacity: *Data Input Box.*

Enter the post unfiltered water system (generation and/or distribution) daily system capacity in gallons per day (GPD).

4. Annual System Capacity:

Indicates the post unfiltered water annual system capacity in kilogallons (KGal).

5. Unit Cost of Capital:

Indicates the post unfiltered water unit cost of capital in dollars (\$) per kilogallon (KGal) to be included into Rate B. This is based on the annual capital charge and the annual system capacity.

V. Rates Summary

1. Unit Cost of Operation:

Indicates the post unfiltered water rates unit cost of operation component in dollars (\$) per kilogallon (KGal).

2. Unit Cost of Maintenance:

Indicates the post unfiltered water rates unit cost of maintenance component in dollars (\$) per kilogallon (KGal).

3. RATE A UNIT CHARGE:

Indicates the post unfiltered water Rate A unit charge in dollars (\$) per kilogallon (KGal).

4. Unit Cost of Capital:

Indicates the post unfiltered water Rate B unit cost of capital component in dollars (\$) per kilogallon (KGal).

5. Subtotal:

Indicates the sum of the Rate A unit charge and the unit cost of capital in dollars (\$) per kilogallon (KGal).

6. Administrative Overhead Cost:

Indicates the post unfiltered water Rate B administrative overhead cost component in dollars (\$) per

kilogallon (KGal). This is fixed at 3% of the sum of the Rate A unit charge and the unit cost of capital.

7. RATE B UNIT CHARGE: Indicates the post unfiltered water Rate B unit charge in dollars (\$) per kilogallon (KGal).

COST OF PUMPING UNFILTERED WATER WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

1. Electric Consumption

a. Metered *Data Input Box.* Enter the electric power total consumption quantity in kilowatt-hours (KWh) used by metered pumps for the last 12 months.

b. Unmetered Indicates the electric power total estimated usage (consumption) in kilowatt-hours (KWh) used by unmetered pumps for the last 12 months as computed in the “4. Estimated Usage for Unmetered Pumps:” block that follows.

c. Total Indicates the total electric power consumption in kilowatt-hours (KWh), metered and unmetered, used for pumping the post unfiltered water for the last 12 months.

2. Electric Power Rate for Pumping Indicates the current post electric power sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post electric power sales rates main worksheet computations.

3. TOTAL COST OF PUMPING UNFILTERED WATER Indicates the total post electric power cost for pumping unfiltered water in dollars (\$). This dollar amount also appears in the “4. Pumping Cost:” drilldown screen button data input box found at the post unfiltered water sales rates main worksheet screen.

4. Estimated Usage for Unmetered Pumps: This block allows you to estimate the electric power consumption of up to 50 pumps (pump blocks a through ax). UTILRATE for DOS assumes a 65% pump efficiency in the formula to estimate the electric power consumption. This formula is shown at the bottom of the cost of pumping unfiltered water worksheet.

a. Pump (No.____/Location) *Data Input Box.* Enter a unique pump identifier or location (up to 16 alphanumeric characters) for the specific pump that you want to estimate the electric power consumption.

1. Average Pumping Head *Data Input Box*. Enter the average pumping head in feet (Ft) applicable to the specific pump that you want to estimate the electric power consumption.

2. Pumping Rate *Data Input Box*. Enter the pumping rate in gallons per minute (GPM) applicable to the specific pump that you want to estimate the electric power consumption.

3. Annual Hours of Use *Data Input Box*. Enter the period of time in hours (Hrs) that the specific pump was operational during the last 12 months.

4. Total KWh Consumed Indicates the total electric power in kilowatt-hours (KWh) consumed by the specific pump.

POST UNFILTERED WATER SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box*. Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the unfiltered water sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost *Table*. This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post unfiltered water sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box)*. Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.
- **Amortization Year 1 2 3 4 5** *Toggle Switch Buttons*. Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**Enter**], or if you have a mouse, click the toggle switch

button cell. Notice that an “X” shows up on the cell. If you select the same cell again, the “X” disappears.

- **Project Total Cost** *Data Input Column (Box)*. Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.
- **Amortized Project Cost** *Column*. Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post unfiltered water sales rates main worksheet screen.

Post Sewage Sales Rates

TO COMPUTE THE POST SEWAGE SALES RATES

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **S** for **Sewage**. Notice that the cell pointer is inside the “1. Purchased Quantity (Bills):” data input box.
5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**⏏** **Enter**]. To access the remainder of the worksheet area, press [**PgDn**].
6. To access the cost of pumping sewage worksheet screen, move the cell pointer with the arrow keys to the “4. Pumping Cost:” drilldown screen button data input box and press [**⏏** **Enter**], or if you have a mouse,

move the mouse cursor to the “4. Pumping Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the cost for pumping sewage worksheet screen, follow the same procedures stated in step 5 above. To exit the cost for pumping sewage worksheet screen and go back to the main worksheet screen, press **[Esc]**, or if you have a mouse, click the right mouse button.

7. To access the post sewage abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and press **[Enter]**, or if you have a mouse, move the mouse cursor to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 5 above, except that you do not need to press **[PgDn]** to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press **[Esc]**, or if you have a mouse, click the right mouse button.

POST SEWAGE SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post sewage sales rates computations main worksheet screen.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* If the installation purchased the sewage service, enter the post sewage total purchased quantity, in kilogallons (KGal), for the last 12 months.

2. Treated Quantity:

a. Metered Sewage: *Data Input Box.* If the installation treated its own sewage, enter the post sewage total treated metered quantity, in kilogallons (KGal), for the last 12 months.

b. Unmetered *Block.* This block is used to estimate the sewage consumption as a percentage of the total water consumed at the installation.

1) Total Actual Water Consumed: It indicates the total water (filtered and unfiltered) quantity in kilogallons (KGal) consumed at the installation for the last 12 months. UTILRATE for DOS automatically picked

up this quantity from the post filtered water sales rates main worksheet and the post unfiltered water sales rates main worksheet.

2) Percent of Water Considered as Sewage:

Data Input Box. Enter the percentage of water representing the sewage consumed by the installation. Normally this percentage is 70%. This percentage may be revised to reflect more closely your system. Please do not consider sewage infiltration on this percentage.

3) Sewage Consumption as a Percentage of

Water: Indicates the post water (filtered and unfiltered) consumption quantity in kilogallons (KGal) that is considered as sewage consumption.

3. Total Purchased and treated Quantity: Indicates the total post sewage (purchased and treated) consumption quantity in kilogallons (KGal).

4. Percent Infiltration: *Data Input Box.* Enter the percentage that represents the post sewage system collection system infiltration.

5. Sewage Infiltration: Indicates the kilogallons (KGal) quantity from the post sewage total consumption (purchased and treated) that is considered as infiltration.

6. Total Adjusted Consumption: Indicates the post sewage total consumption in kilogallons (KGal) adjusted for infiltration.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* If the installation purchased the sewage service, enter the post sewage total purchased cost in dollars (\$) for the last 12 months.

2. Treatment Plant Operation Cost: *Data Input Box.* If the installation treated its own sewage, enter the post sewage total operation cost in dollars (\$), related to the treatment plant, for the last 12 months. Include all labor, material, and supply costs used in operating the sewage treatment facilities (wells, treatment plants, etc.). Do not include the electricity used for pumping.

3. Collection System Operation Cost: *Data Input Box.* Enter the post sewage total operation cost in dollars (\$), related to the sewage collection system, for the last 12 months.

4. Pumping Cost: *Drilldown Screen Button Data Input Box.*

When this button is selected, it accesses the post cost for pumping sewage worksheet screen. It indicates the post electric power cost for pumping sewage in dollars (\$) to be included into the rates as computed in the cost for pumping sewage worksheet screen. See the “Cost of Pumping Sewage Worksheet Screen Instructions/ Description” section below for the instructions on entering the pumping cost data.

5. Total Cost of Operation: Indicates the post sewage total cost of operation in dollars (\$).

6. Unit Cost of Operation: Indicates the post sewage unit cost of operation in dollars (\$) per kilogallon (KGal).

III. Cost of Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned post sewage system (treatment and/or distribution) total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Abnormal Maintenance Cost: *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post sewage abnormal (non-recurrent) maintenance worksheet screen. It indicates the post sewage total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Sewage Sales Rates Abnormal Maintenance Worksheet Screen Instructions/ Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter the post sewage system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post sewage total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post sewage unit cost of maintenance in dollars (\$) per kilogallon (KGal).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.*

Using the installation real property records, enter the post sewage system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation's official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post sewage total

annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post sewage system present acquisition cost.

3. Daily System Capacity: *Data Input Box.* Enter the post

sewage system (generation and/or distribution) daily system capacity in gallons per day (GPD).

4. Annual System Capacity: Indicates the post sewage annual

system capacity in kilogallons (KGal).

5. Unit Cost of Capital: Indicates the post sewage unit cost

of capital in dollars (\$) per kilogallon (KGal) to be included into Rate B. This is based on the annual capital charge and the annual system capacity.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post sewage rates

unit cost of operation component in dollars (\$) per kilogallon (KGal).

2. Unit Cost of Maintenance: Indicates the post sewage rates

unit cost of maintenance component in dollars (\$) per kilogallon (KGal).

3. RATE A UNIT CHARGE: Indicates the post sewage Rate A unit

charge in dollars (\$) per kilogallon (KGal).

4. Unit Cost of Capital: Indicates the post sewage Rate B unit

cost of capital component in dollars (\$) per kilogallon (KGal).

5. Subtotal: Indicates the sum of the Rate A unit charge and the unit

cost of capital in dollars (\$) per kilogallon (KGal).

6. Administrative Overhead Cost: Indicates the post sewage

Rate B administrative overhead cost component in dollars (\$) per kilogallon (KGal). This is fixed at 3% of the sum of the Rate A unit charge and the unit cost of capital.

7. RATE B UNIT CHARGE: Indicates the post sewage Rate B unit charge in dollars (\$) per kilogallon (KGal).

COST OF PUMPING SEWAGE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

1. Electric Consumption

a. Metered *Data Input Box.* Enter the electric power total consumption quantity in kilowatt-hours (KWh) used by metered pumps for the last 12 months.

b. Unmetered Indicates the electric power total estimated usage (consumption) in kilowatt-hours (KWh) used by unmetered pumps for the last 12 months as computed in the “4. Estimated Usage for Unmetered Pumps:” block that follows.

c. Total Indicates the total electric power consumption in kilowatt-hours (KWh), metered and unmetered, used for pumping the post sewage for the last 12 months.

2. Electric Power Rate for Pumping Indicates the current post electric power sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post electric power sales rates main worksheet computations.

3. TOTAL COST OF PUMPING SEWAGE Indicates the total post electric power cost for pumping sewage in dollars (\$). This dollar amount also appears in the “4. Pumping Cost:” drilldown screen button data input box found at the post sewage sales rates main worksheet screen.

4. Estimated Usage for Unmetered Pumps: This block allows you to estimate the electric power consumption of up to 50 pumps (pump blocks a through ax). UTILRATE for DOS assumes a 65% pump efficiency in the formula to estimate the electric power consumption. This formula is shown at the bottom of the cost of pumping sewage worksheet.

a. Pump (No.____/Location) *Data Input Box.* Enter a unique pump identifier or location (up to 16 alphanumeric characters) for the specific pump that you want to estimate the electric power consumption.

1. Average Pumping Head *Data Input Box.* Enter the average pumping head in feet (Ft) applicable to the specific pump that you want to estimate the electric power consumption.

2. Pumping Rate *Data Input Box.* Enter the pumping rate in gallons per minute (GPM) applicable to the specific pump that you want to estimate the electric power consumption.

3. Annual Hours of Use *Data Input Box.* Enter the period of time in hours (Hrs) that the specific pump was operational during the last 12 months.

4. Total KWh Consumed Indicates the total electric power in kilowatt-hours (KWh) consumed by the specific pump.

POST SEWAGE SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the sewage sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost *Table.* This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post sewage sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box).* Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.
- **Amortization Year 1 2 3 4 5** *Toggle Switch Buttons.* Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**Enter**], or if you have a mouse, click the toggle switch button cell. Notice that an "X" shows up on the cell. If you select the same cell again, the "X" disappears.

- **Project Total Cost** *Data Input Column (Box)*. Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.
- **Amortized Project Cost** *Column*. Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post sewage sales rates main worksheet screen.

Post Refuse Collection/Disposal Sales Rates

TO COMPUTE THE POST REFUSE COLLECTION/DISPOSAL SALES RATES

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **R** for **Refuse Collection/Disposal**. Notice that at the top right side of the worksheet screen there is a unit label button and the cell pointer is inside the “a. In-House:” data input box.
5. The default unit label is cubic yard (CuYd). If you want to change the unit labels to ton (Ton), navigate the cell pointer to the unit label button and press [**Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. If you select the unit label button again, notice that the unit labels change back to cubic yard (CuYd). Every time that you select this button, the unit labels cycle. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the

cell pointer and pressing [**⏏** **Enter**] the cell pointer jumps to the “a. In-House:” data input box.

6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**⏏** **Enter**]. To access the remainder of the worksheet area, press [**⏏** **PgDn**].

POST REFUSE COLLECTION/DISPOSAL SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post refuse collection/disposal sales rates computations main worksheet screen.

I. Quantity Collected/Disposed

1. Collection

a. In-House: *Data Input Box*. If the installation uses in-house resources to collect the post refuse, enter the post refuse total quantity collected by the in-house resources, in cubic yards (CuYd) or tons (Ton), for the last 12 months.

b. Contracted: *Data Input Box*. If the installation contracted for refuse collection services, enter the post refuse total quantity collected by the contractor, in cubic yards (CuYd) or tons (Ton), for the last 12 months.

c. Other: *Data Input Box*. If the installation uses other resources to collect the post refuse, enter the post refuse total quantity collected using other resources, in cubic yards (CuYd) or tons (Ton), for the last 12 months.

d. Total Quantity Collected: Indicates the post refuse total quantity collected in cubic yards (CuYd) or tons (Ton) for the last 12 months.

2. Disposal:

a. In-House: *Data Input Box*. If the installation uses in-house resources to dispose the post refuse, enter the post refuse total quantity disposed by the in-house resources, in cubic yards (CuYd) or tons (Ton), for the last 12 months.

b. Contracted: *Data Input Box.* If the installation contracted for refuse disposal service, enter the post refuse total quantity disposed by the contractor, in cubic yards (CuYd) or tons (Ton), for the last 12 months.

c. Other: *Data Input Box.* If the installation uses other resources to disposed the post refuse, enter the post refuse total quantity disposed using other resources, in cubic yards (CuYd) or tons (Ton), for the last 12 months.

d. Total Quantity Disposed: Indicates the post refuse total quantity disposed in cubic yards (CuYd) or tons (Ton) for the last 12 months.

II. Cost of Operation

1. Collection

a. In-House Operation Cost: *Data Input Box.* If the installation uses in-house resources to collect the post refuse, enter the post refuse collection total in-house operation cost in dollars (\$) for the last 12 months.

b. Contracted Operation Cost: *Data Input Box.* If the installation contracted for refuse collection services, enter the post refuse collection total contract cost in dollars (\$) applicable to the last 12 months.

c. Other Operation Cost: *Data Input Box.* If the installation uses other resources to collect the post refuse, enter the post refuse collection total other resources operation cost in dollars (\$) for the last 12 months.

d. Total Cost of Operation: Indicates the post refuse collection total cost of operation in dollars (\$).

e. Unit Cost of Operation for Collection: Indicates the post refuse collection unit cost of operation in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

2. Disposal:

a. In-House Operation Cost: *Data Input Box.* If the installation uses in-house resources to dispose the post refuse, enter the post refuse disposal total in-house operation cost in dollars (\$) for the last 12 months.

b. Contracted Operation Cost: *Data Input Box.* If the installation contracted for refuse disposal services, enter the post refuse disposal total contract cost in dollars (\$) applicable to the last 12 months.

c. Other Operation Cost: *Data Input Box.* If the installation uses other resources to dispose the post refuse, enter the post refuse disposal total other resources operation cost in dollars (\$) for the last 12 months.

d. Total Cost of Operation: Indicates the post refuse disposal total cost of operation in dollars (\$).

e. Unit Cost of Operation for Disposal: Indicates the post refuse disposal unit cost of operation in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

III. Cost of Maintenance

1. Collection

a. In-House Maintenance Cost: *Data Input Box.* If the installation uses in-house resources to maintain the post refuse collection system, enter the post refuse collection total in-house maintenance cost in dollars (\$) for the last 12 months.

b. Contracted Maintenance Cost: *Data Input Box.* If the installation contracted for the maintenance of the post refuse collection system, enter the post refuse collection total maintenance contract cost in dollars (\$) applicable to the last 12 months.

c. Other Maintenance Cost: *Data Input Box.* If the installation uses other resources to maintain the post refuse collection system, enter the post refuse collection total other resources maintenance cost in dollars (\$) for the last 12 months.

d. Reimbursed Maintenance Cost: *Data Input Box.* Enter the post refuse collection system total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

e. Total Cost of Maintenance: Indicates the post refuse collection total cost of maintenance in dollars (\$).

f. Unit Cost of Maintenance for Collection:

Indicates the post refuse collection unit cost of maintenance in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

2. Disposal:**a. In-House Maintenance Cost: Data Input Box.**

If the installation uses in-house resources to maintain the post refuse disposal system, enter the post refuse disposal total in-house maintenance cost in dollars (\$) for the last 12 months.

b. Contracted Maintenance Cost: Data Input Box.

If the installation contracted for the maintenance of the post refuse disposal system, enter the post refuse disposal total maintenance contract cost in dollars (\$) applicable to the last 12 months.

c. Other Maintenance Cost: Data Input Box.

If the installation uses other resources to maintain the post refuse disposal system, enter the post refuse disposal total other resources maintenance cost in dollars (\$) for the last 12 months.

d. Reimbursed Maintenance Cost: Data Input Box.

Enter the post refuse disposal system total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

e. Total Cost of Maintenance:

Indicates the post refuse disposal total cost of maintenance in dollars (\$).

f. Unit Cost of Maintenance for Disposal:

Indicates the post refuse disposal unit cost of maintenance in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

IV. Cost of Capital**1. Collection****a. Acquisition Cost (RP Records): Data Input Box.**

Using the installation real property records, enter the post refuse collection system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation's official utilities sales tariff book.

b. Annual Capital Charge: Indicates the post refuse collection total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post refuse collection system present acquisition cost.

c. Daily System Capacity: *Data Input Box.* Enter the post refuse collection daily system capacity in cubic yards (CuYd) per day or tons (Ton) per day.

d. Annual System Capacity: Indicates the post refuse collection annual system capacity in cubic yards (CuYd) or tons (Ton).

e. Unit Cost of Capital for Collection: Indicates the post refuse collection unit cost of capital in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton) to be included into Rate B. This is based on the annual capital charge for collection and the annual system capacity for collection.

2. Disposal

a. Acquisition Cost (RP Records): *Data Input Box.* Using the installation real property records, enter the post refuse disposal system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation's official utilities sales tariff book.

b. Annual Capital Charge: Indicates the post refuse disposal total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post refuse disposal system present acquisition cost.

c. Daily System Capacity: *Data Input Box.* Enter the post refuse disposal daily system capacity in cubic yards (CuYd) per day or tons (Ton) per day.

d. Annual System Capacity: Indicates the post refuse disposal annual system capacity in cubic yards (CuYd) or tons (Ton).

e. Unit Cost of Capital for Disposal: Indicates the post refuse disposal unit cost of capital in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton) to be included into Rate B. This is based on the annual capital charge for disposal and the annual system capacity for disposal.

V. Rates Summary

1. Collection

a. Unit Cost of Operation: Indicates the post refuse collection rates unit cost of operation component in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

b. Unit Cost of Maintenance: Indicates the post refuse collection rates unit cost of maintenance component in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

c. RATE A UNIT CHARGE FOR COLLECTION: Indicates the post refuse collection Rate A unit charge in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

d. Unit Cost of Capital: Indicates the post refuse collection Rate B unit cost of capital component in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

e. Subtotal: Indicates the sum of the post refuse collection Rate A unit charge and the post refuse collection unit cost of capital in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

f. Administrative Overhead Cost: Indicates the post refuse collection Rate B administrative overhead cost component in dollars (\$) cubic yard (CuYd) or dollars (\$) per ton (Ton). This is fixed at 3% of the sum of the post refuse collection Rate A unit charge and the post refuse collection unit cost of capital.

g. RATE B UNIT CHARGE FOR COLLECTION: Indicates the post refuse collection Rate B unit charge in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

2. Disposal

a. Unit Cost of Operation: Indicates the post refuse disposal rates unit cost of operation component in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

b. Unit Cost of Maintenance: Indicates the post refuse disposal rates unit cost of maintenance component in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

c. RATE A UNIT CHARGE FOR DISPOSAL: Indicates the post refuse disposal Rate A unit charge in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

d. Unit Cost of Capital: Indicates the post refuse disposal Rate B unit cost of capital component in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

e. Subtotal: Indicates the sum of the post refuse disposal Rate A unit charge and the post refuse disposal unit cost of capital in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

f. Administrative Overhead Cost: Indicates the post refuse disposal Rate B administrative overhead cost component in dollars (\$) cubic yard (CuYd) or dollars (\$) per ton (Ton). This is fixed at 3% of the sum of the post refuse disposal Rate A unit charge and the post refuse disposal unit cost of capital.

g. RATE B UNIT CHARGE FOR DISPOSAL: Indicates the post refuse disposal Rate B unit charge in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

2. Combined Rates

a. Rate A Unit Charge for Collection: Indicates the post refuse collection Rate A unit charge in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

b. Rate A Unit Charge for Disposal: Indicates the post refuse disposal Rate A unit charge in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

c. COMBINED RATE A UNIT CHARGE: Indicates the post refuse combined (collection and disposal) Rate A unit charge in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

d. Rate B Unit Charge for Collection: Indicates the post refuse collection Rate B unit charge in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

e. Rate B Unit Charge for Disposal: Indicates the post refuse disposal Rate B unit charge in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

f. COMBINED RATE B UNIT CHARGE: Indicates the post refuse combined (collection and disposal) Rate B unit charge in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

Post Firm Natural Gas Sales Rates

TO COMPUTE THE POST FIRM NATURAL GAS SALES RATES

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **N** for **firm Natural Gas**. Notice that at the top right side of the worksheet screen there is a unit label button, and the cell pointer is inside the "1. Purchased Quantity (Bills):" data input box.
5. The default unit label is decatherm (Dth). If you want to change the unit labels to cubic foot (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal unit (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), or therm (Th), navigate the cell pointer to the unit label button and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. Repeat this procedure as many times as needed to get the desired unit label. Every time that you select this button, the unit labels cycle among the unit labels. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**↵** **Enter**] the cell pointer jumps to the "1. Purchased Quantity (Bills):" data input box.
6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵** **Enter**]. To access the remainder of the worksheet area, press [**PgDn**].
7. To access the post firm natural gas abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the "2. Abnormal Maintenance Cost:" drilldown screen button data input box and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the "2. Abnormal Maintenance Cost:" drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 6 above, except that you do not need to press [**PgDn**] to access the

remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press **[Esc]**, or if you have a mouse, click the right mouse button.

POST FIRM NATURAL GAS SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post firm natural gas sales rates computations main worksheet screen.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* Enter the post firm natural gas total purchased quantity, in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth) for the last 12 months.

2. Percent Losses: *Data Input Box.* Enter the percentage that represents the post firm natural gas system transmission losses. Normal losses may be estimated at 5%. These percentages may be revised to reflect more closely your system.

3. Losses: Indicates the cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth) quantity from the post firm natural gas total consumption that is considered as transmission losses.

4. Total Adjusted Consumption: Indicates the post firm natural gas total consumption in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* Enter the post firm natural gas total purchased cost in dollars (\$) for the last 12 months.

2. Distribution System Operation Cost: *Data Input Box.* Enter the post firm natural gas total operation cost in dollars (\$), related to the firm natural gas distribution system, for the last 12 months.

3. Total Cost of Operation: Indicates the post firm natural gas total cost of operation in dollars (\$).

4. Unit Cost of Operation: Indicates the post firm natural gas unit cost of operation in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

III. Cost of Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned post firm natural gas system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Abnormal Maintenance Cost: *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post firm natural gas abnormal (non-recurrent) maintenance worksheet screen. It indicates the post firm natural gas total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Firm natural gas Sales Rates Abnormal Maintenance Worksheet Screen Instructions/ Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter the post firm natural gas system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post firm natural gas total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post firm natural gas unit cost of maintenance in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per

one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.*

Using the installation real property records, enter the post firm natural gas system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation's official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post firm natural gas total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post firm natural gas system present acquisition cost.

3. Daily Peak Demand: *Data Input Box.* Enter the post firm natural gas system daily peak demand in cubic feet (CF) per day, one hundred cubic feet (CCF) per day, one thousand cubic feet (MCF) per day, one million cubic feet (MMCF) per day, British thermal units (BTU) per day, one thousand British thermal units (MBTU) per day, one million British thermal units (MMBTU) per day, therms (Th) per day, or decatherms (Dth) per day.

4. Annual System Capacity: Indicates the post firm natural gas annual system capacity in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth).

5. Unit Cost of Capital: Indicates the post firm natural gas unit cost of capital in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth) to be included into Rate B. This is based on the annual capital charge and the annual system capacity.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post firm natural gas rates unit cost of operation component in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU),

dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

2. Unit Cost of Maintenance: Indicates the post firm natural gas rates unit cost of maintenance component in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

3. RATE A UNIT CHARGE: Indicates the post firm natural gas Rate A unit charge in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

4. Unit Cost of Capital: Indicates the post firm natural gas Rate B unit cost of capital component in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

5. Subtotal: Indicates the sum of the Rate A unit charge and the unit cost of capital in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

6. Administrative Overhead Cost: Indicates the post firm natural gas Rate B administrative overhead cost component in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth). This is fixed at 3% of the sum of the Rate A unit charge and the unit cost of capital.

7. RATE B UNIT CHARGE: Indicates the post firm natural gas Rate B unit charge in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

8. FIRM NATURAL GAS RATE FOR STEAM, HOT WATER, SPACE COOLING, AND SPACE HEATING (Rate A Unit Charge): Indicate the post firm natural gas rate in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth) applicable to other utility services rates computations.

POST FIRM NATURAL GAS SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the firm natural gas sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost *Table.* This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post firm natural gas sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box).* Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.
- **Amortization Year 1 2 3 4 5** *Toggle Switch Buttons.* Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column,

and press [**Enter**], or if you have a mouse, click the toggle switch button cell. Notice that an “X” shows up on the cell. If you select the same cell again, the “X” disappears.

- **Project Total Cost** *Data Input Column (Box)*. Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.
- **Amortized Project Cost** *Column*. Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post firm natural gas sales rates main worksheet screen.

Post Interruptible Natural Gas Sales Rates

TO COMPUTE THE POST INTERRUPTIBLE NATURAL GAS SALES RATES

1. Press [**F10**] to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **I** for **Interruptible Natural Gas**. Notice that at the top right side of the worksheet screen there is a unit label button, and the cell pointer is inside the “1. Purchased Quantity (Bills):” data input box.
5. The default unit label is decatherm (Dth). If you want to change the unit labels to cubic foot (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal unit (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), or therm (Th), navigate the cell pointer to the unit label button

and press [**↵ Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. Repeat this procedure as many times as needed to get the desired unit label. Every time that you select this button, the unit labels cycle among the unit labels. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**↵ Enter**] the cell pointer jumps to the “1. Purchased Quantity (Bills):” data input box.

6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵ Enter**]. To access the remainder of the worksheet area, press [**⏴ PgDn**].
7. To access the post interruptible natural gas abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and press [**↵ Enter**], or if you have a mouse, move the mouse cursor to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 6 above, except that you do not need to press [**⏴ PgDn**] to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press [**⏴ Esc**], or if you have a mouse, click the right mouse button.

POST INTERRUPTIBLE NATURAL GAS SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post interruptible natural gas sales rates computations main worksheet screen.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* Enter the post interruptible natural gas total purchased quantity, in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth) for the last 12 months.

2. Percent Losses: *Data Input Box.* Enter the percentage that represents the post interruptible natural gas system transmission losses. Normal

losses may be estimated at 5%. These percentages may be revised to reflect more closely your system.

3. Losses: Indicates the cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth) quantity from the post interruptible natural gas total consumption that is considered as transmission losses.

4. Total Adjusted Consumption: Indicates the post interruptible natural gas total consumption in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* Enter the post interruptible natural gas total purchased cost in dollars (\$) for the last 12 months.

2. Distribution System Operation Cost: *Data Input Box.* Enter the post interruptible natural gas total operation cost in dollars (\$), related to the interruptible natural gas distribution system, for the last 12 months.

3. Total Cost of Operation: Indicates the post interruptible natural gas total cost of operation in dollars (\$).

4. Unit Cost of Operation: Indicates the post interruptible natural gas unit cost of operation in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

III. Cost of Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned post interruptible natural gas system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Abnormal Maintenance Cost: *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post interruptible natural gas abnormal (non-recurrent) maintenance worksheet screen. It indicates the post interruptible natural gas total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Interruptible natural gas Sales Rates Abnormal Maintenance Worksheet Screen Instructions/ Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter the post interruptible natural gas system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post interruptible natural gas total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post interruptible natural gas unit cost of maintenance in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.* Using the installation real property records, enter the post interruptible natural gas system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation’s official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post interruptible natural gas total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post interruptible natural gas system present acquisition cost.

3. Daily Peak Demand: *Data Input Box.* Enter the post interruptible natural gas system daily peak demand in cubic feet (CF) per day, one hundred cubic feet (CCF) per day, one thousand cubic feet (MCF) per day, one million cubic feet (MMCF) per day, British thermal units (BTU) per day, one

thousand British thermal units (MBTU) per day, one million British thermal units (MMBTU) per day, therms (Th) per day, or decatherms (Dth) per day.

4. Annual System Capacity: Indicates the post interruptible natural gas annual system capacity in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth).

5. Unit Cost of Capital: Indicates the post interruptible natural gas unit cost of capital in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth) to be included into Rate B. This is based on the annual capital charge and the annual system capacity.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post interruptible natural gas rates unit cost of operation component in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

2. Unit Cost of Maintenance: Indicates the post interruptible natural gas rates unit cost of maintenance component in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

3. RATE A UNIT CHARGE: Indicates the post interruptible natural gas Rate A unit charge in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

4. Unit Cost of Capital: Indicates the post interruptible natural gas Rate B unit cost of capital component in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

5. Subtotal: Indicates the sum of the Rate A unit charge and the unit cost of capital in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

6. Administrative Overhead Cost: Indicates the post interruptible natural gas Rate B administrative overhead cost component in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth). This is fixed at 3% of the sum of the Rate A unit charge and the unit cost of capital.

7. RATE B UNIT CHARGE: Indicates the post interruptible natural gas Rate B unit charge in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

NOTE: The interruptible natural gas Rate A unit charge is automatically used for the computation of the steam, hot water, space cooling and space heating sales rates, as applicable; when the installation does not purchase firm natural gas.

POST INTERRUPTIBLE NATURAL GAS SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the interruptible natural gas sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost *Table.* This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post interruptible natural gas sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box).* Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.
- **Amortization Year 1 2 3 4 5** *Toggle Switch Buttons.* Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**Enter**], or if you have a mouse, click the toggle switch button cell. Notice that an "X" shows up on the cell. If you select the same cell again, the "X" disappears.
- **Project Total Cost** *Data Input Column (Box).* Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.
- **Amortized Project Cost** *Column.* Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post interruptible natural gas sales rates main worksheet screen.

Liquefied Petroleum Gas (LPG) Sales Rates

TO COMPUTE THE POST LIQUEFIED PETROLEUM GAS (LPG) SALES RATES

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **L** for **LPG**. Notice that at the top right side of the worksheet screen there is a unit label button, and the cell pointer is inside the “1. Purchased Quantity (Bills):” data input box.
5. The default unit label is gallon (Gal). If you want to change the unit labels to pound (Lb), navigate the cell pointer to the unit label button and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. If you select the unit label button again, notice that the unit labels change back to gallon (Gal). Every time that you select this button, the unit labels cycle. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**↵** **Enter**] the cell pointer jumps to the “1. Purchased Quantity (Bills):” data input box.
6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵** **Enter**]. To access the remainder of the worksheet area, press [**PgDn**].
7. To access the post liquefied petroleum gas abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the “2. Abnormal Maintenance Cost:” drilldown screen button data

input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 6 above, except that you do not need to press **[PgDn]** to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press **[Esc]**, or if you have a mouse, click the right mouse button.

POST LIQUEFIED PETROLEUM GAS (LPG) SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post liquefied petroleum gas sales rates computations main worksheet screen.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* Enter the post liquefied petroleum gas total purchased quantity, in gallons (Gal) or pounds (Lb), for the last 12 months.

2. Percent Losses: *Data Input Box.* Enter the percentage that represents the post liquefied petroleum gas system transmission losses.

3. Losses: Indicates the gallons (Gal) or pounds (Lb) quantity from the post liquefied petroleum gas total consumption that is considered as transmission losses.

4. Total Adjusted Consumption: Indicates the post liquefied petroleum gas total consumption in gallons (Gal) or pounds (Lb) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* Enter the post liquefied petroleum gas total purchased cost in dollars (\$) for the last 12 months.

2. Distribution/Storage System Operation Cost: *Data Input Box.* Enter the post liquefied petroleum gas total operation cost in dollars (\$), related to the liquefied petroleum gas distribution/storage system, for the last 12 months.

3. Total Cost of Operation: Indicates the post liquefied petroleum gas total cost of operation in dollars (\$).

4. Unit Cost of Operation: Indicates the post liquefied petroleum gas unit cost of operation in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

III. Cost of Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned post liquefied petroleum gas system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Abnormal Maintenance Cost: *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post liquefied petroleum gas abnormal (non-recurrent) maintenance worksheet screen. It indicates the post liquefied petroleum gas total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Liquefied Petroleum Gas (LPG) Sales Rates Abnormal Maintenance Worksheet Screen Instructions/Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter the post liquefied petroleum gas system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post liquefied petroleum gas total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post liquefied petroleum gas unit cost of maintenance in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.* Using the installation real property records, enter the post liquefied petroleum gas system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation’s official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post liquefied petroleum gas total annual capital charge in dollars (\$) to be incorporated into

Rate B. This is a mandatory 10% of the post liquefied petroleum gas system present acquisition cost.

3. Daily System Capacity: *Data Input Box.* Enter the post liquefied petroleum gas daily system capacity in gallons (Gal) per day or pounds (Lb) per day.

4. Annual System Capacity: Indicates the post liquefied petroleum gas annual system capacity in gallons (Gal) or pounds (Lb).

5. Unit Cost of Capital: Indicates the post liquefied petroleum gas unit cost of capital in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb) to be included into Rate B. This is based on the annual capital charge and the annual system capacity.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post liquefied petroleum gas rates unit cost of operation component in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

2. Unit Cost of Maintenance: Indicates the post liquefied petroleum gas rates unit cost of maintenance component in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

3. RATE A UNIT CHARGE: Indicates the post liquefied petroleum gas Rate A unit charge in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

4. Unit Cost of Capital: Indicates the post liquefied petroleum gas Rate B unit cost of capital component in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

5. Subtotal: Indicates the sum of the Rate A unit charge and the unit cost of capital in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

6. Administrative Overhead Cost: Indicates the post liquefied petroleum gas Rate B administrative overhead cost component in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb). This is fixed at 3% of the sum of the Rate A unit charge and the unit cost of capital.

7. RATE B UNIT CHARGE: Indicates the post liquefied petroleum gas Rate B unit charge in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

8. LPG RATE FOR STEAM, HOT WATER, SPACE COOLING, AND SPACE HEATING (Rate A Unit Charge): Indicate the post liquefied petroleum gas rate in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb) applicable to other utility services rates computations.

POST LIQUEFIED PETROLEUM GAS (LPG) SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the liquefied petroleum gas sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost *Table.* This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post liquefied petroleum gas sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box).* Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.
- **Amortization Year 1 2 3 4 5** *Toggle Switch Buttons.* Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**Enter**], or if you have a mouse, click the toggle switch button cell. Notice that an "X" shows up on the cell. If you select the same cell again, the "X" disappears.
- **Project Total Cost** *Data Input Column (Box).* Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.

- **Amortized Project Cost Column.** Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post liquefied petroleum gas sales rates main worksheet screen.

Post Fuel Oil No. 2 Sales Rates

TO COMPUTE THE POST FUEL OIL NO. 2 SALES RATES

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **2** for **fuel oil number 2**. Notice that the cell pointer is inside the “1. Purchased Quantity (Bills):” data input box.
5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵** **Enter**]. To access the remainder of the worksheet area, press [**PgDn**].
6. To access the post fuel oil number 2 abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 5 above, except that you do not need to press [**PgDn**] to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to

the main worksheet screen, press **[Esc]**, or if you have a mouse, click the right mouse button.

POST FUEL OIL NO. 2 SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post fuel oil number 2 sales rates computations main worksheet screen.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* Enter the post fuel oil number 2 total purchased quantity in gallons (Gal) for the last 12 months.

2. Percent Losses: *Data Input Box.* Enter the percentage that represents the post fuel oil number 2 system losses.

3. Losses: Indicates the gallons (Gal) quantity from the post fuel oil number 2 total consumption that is considered as losses.

4. Total Adjusted Consumption: Indicates the post fuel oil number 2 total consumption in gallons (Gal) adjusted for losses.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* Enter the post fuel oil number 2 total purchased cost in dollars (\$) for the last 12 months.

2. Distribution/Storage System Operation Cost: *Data Input Box.* Enter the post fuel oil number 2 total operation cost in dollars (\$), related to the fuel oil number 2 distribution/storage system, for the last 12 months.

3. Total Cost of Operation: Indicates the post fuel oil number 2 total cost of operation in dollars (\$).

4. Unit Cost of Operation: Indicates the post fuel oil number 2 unit cost of operation in dollars (\$) per gallon (Gal).

III. Cost of Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned post fuel oil number 2 system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Abnormal Maintenance Cost: *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post fuel oil number 2 abnormal (non-recurrent) maintenance worksheet screen. It indicates the post fuel oil number 2 total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Fuel Oil No. 2 Sales Rates Abnormal Maintenance Worksheet Screen Instructions/Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter the post fuel oil number 2 system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post fuel oil number 2 total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post fuel oil number 2 unit cost of maintenance in dollars (\$) per gallon (Gal).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.* Using the installation real property records, enter the post fuel oil number 2 system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation’s official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post fuel oil number 2 total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post fuel oil number 2 system present acquisition cost.

3. Daily System Capacity: *Data Input Box.* Enter the post fuel oil number 2 daily system capacity in gallons (Gal) per day.

4. Annual System Capacity: Indicates the post fuel oil number 2 annual system capacity in gallons (Gal).

5. Unit Cost of Capital: Indicates the post fuel oil number 2 unit cost of capital in dollars (\$) per gallon (Gal) to be included into Rate B. This is based on the annual capital charge and the annual system capacity.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post fuel oil number 2 rates unit cost of operation component in dollars (\$) per gallon (Gal).

2. Unit Cost of Maintenance: Indicates the post fuel oil number 2 rates unit cost of maintenance component in dollars (\$) per gallon (Gal).

3. RATE A UNIT CHARGE: Indicates the post fuel oil number 2 Rate A unit charge in dollars (\$) per gallon (Gal).

4. Unit Cost of Capital: Indicates the post fuel oil number 2 Rate B unit cost of capital component in dollars (\$) per gallon (Gal).

5. Subtotal: Indicates the sum of the Rate A unit charge and the unit cost of capital in dollars (\$) per gallon (Gal).

6. Administrative Overhead Cost: Indicates the post fuel oil number 2 Rate B administrative overhead cost component in dollars (\$) per gallon (Gal). This is fixed at 3% of the sum of the Rate A unit charge and the unit cost of capital.

7. RATE B UNIT CHARGE: Indicates the post fuel oil number 2 Rate B unit charge in dollars (\$) per gallon (Gal).

8. FUEL OIL RATE FOR STEAM, HOT WATER, AND SPACE HEATING (Rate A Unit Charge): Indicate the post fuel oil number 2 rate in dollars (\$) per gallon (Gal) applicable to other utility services rates computations.

POST FUEL OIL NO. 2 SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the fuel oil number 2 sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost *Table.* This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post fuel oil number 2 sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box).* Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.
- **Amortization Year 1 2 3 4 5** *Toggle Switch Buttons.* Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**Enter**], or if you have a mouse, click the toggle switch button cell. Notice that an "X" shows up on the cell. If you select the same cell again, the "X" disappears.
- **Project Total Cost** *Data Input Column (Box).* Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.
- **Amortized Project Cost** *Column.* Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post fuel oil number 2 sales rates main worksheet screen.

Post Fuel Oil No. 6 Sales Rates

TO COMPUTE THE POST FUEL OIL NO. 6 SALES RATES

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **6** for **fuel oil number 6**. Notice that the cell pointer is inside the “1. Purchased Quantity (Bills):” data input box.
5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**Enter**]. To access the remainder of the worksheet area, press [**PgDn**].
6. To access the post fuel oil number 6 abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and press [**Enter**], or if you have a mouse, move the mouse cursor to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 5 above, except that you do not need to press [**PgDn**] to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press [**Esc**], or if you have a mouse, click the right mouse button.

**POST FUEL OIL NO. 6 SALES RATES MAIN WORKSHEET SCREEN
INSTRUCTIONS/DESCRIPTION**

The following are the instructions or descriptions of the post fuel oil number 6 sales rates computations main worksheet screen.

I. Consumption

1. **Purchased Quantity (Bills):** *Data Input Box.* Enter the post fuel oil number 6 total purchased quantity in gallons (Gal) for the last 12 months.

2. **Percent Losses:** *Data Input Box.* Enter the percentage that represents the post fuel oil number 6 system losses.

3. **Losses:** Indicates the gallons (Gal) quantity from the post fuel oil number 6 total consumption that is considered as losses.

4. **Total Adjusted Consumption:** Indicates the post fuel oil number 6 total consumption in gallons (Gal) adjusted for losses.

II. Cost of Operation

1. **Purchase Cost (Bill):** *Data Input Box.* Enter the post fuel oil number 6 total purchased cost in dollars (\$) for the last 12 months.

2. **Distribution/Storage System Operation Cost:** *Data Input Box.* Enter the post fuel oil number 6 total operation cost in dollars (\$), related to the fuel oil number 6 distribution/storage system, for the last 12 months.

3. **Total Cost of Operation:** Indicates the post fuel oil number 6 total cost of operation in dollars (\$).

4. **Unit Cost of Operation:** Indicates the post fuel oil number 6 unit cost of operation in dollars (\$) per gallon (Gal).

III. Cost of Maintenance

1. **Normal Maintenance Cost:** *Data Input Box.* Enter the installations owned post fuel oil number 6 system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. **Abnormal Maintenance Cost:** *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post fuel oil number 6 abnormal (non-recurrent) maintenance worksheet screen. It indicates the post fuel oil number 6 total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Fuel Oil No. 6 Sales Rates Abnormal Maintenance

Worksheet Screen Instructions/Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter the post fuel oil number 6 system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post fuel oil number 6 total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post fuel oil number 6 unit cost of maintenance in dollars (\$) per gallon (Gal).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.* Using the installation real property records, enter the post fuel oil number 6 system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation’s official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post fuel oil number 2 total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post fuel oil number 6 system present acquisition cost.

3. Daily System Capacity: *Data Input Box.* Enter the post fuel oil number 6 daily system capacity in gallons (Gal) per day.

4. Annual System Capacity: Indicates the post fuel oil number 6 annual system capacity in gallons (Gal).

5. Unit Cost of Capital: Indicates the post fuel oil number 6 unit cost of capital in dollars (\$) per gallon (Gal) to be included into Rate B. This is based on the annual capital charge and the annual system capacity.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post fuel oil number 6 rates unit cost of operation component in dollars (\$) per gallon (Gal).

2. Unit Cost of Maintenance: Indicates the post fuel oil number 6 rates unit cost of maintenance component in dollars (\$) per gallon (Gal).

3. RATE A UNIT CHARGE: Indicates the post fuel oil number 6 Rate A unit charge in dollars (\$) per gallon (Gal).

4. Unit Cost of Capital: Indicates the post fuel oil number 6 Rate B unit cost of capital component in dollars (\$) per gallon (Gal).

5. Subtotal: Indicates the sum of the Rate A unit charge and the unit cost of capital in dollars (\$) per gallon (Gal).

6. Administrative Overhead Cost: Indicates the post fuel oil number 6 Rate B administrative overhead cost component in dollars (\$) per gallon (Gal). This is fixed at 3% of the sum of the Rate A unit charge and the unit cost of capital.

7. RATE B UNIT CHARGE: Indicates the post fuel oil number 6 Rate B unit charge in dollars (\$) per gallon (Gal).

NOTE: The fuel oil number 6 Rate A unit charge is automatically used for the computation of the steam, hot water, and space heating sales rates, as applicable; when the installation does not purchase fuel oil number 2.

POST FUEL OIL NO. 6 SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the fuel oil number 6 sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost *Table.* This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post fuel oil number 6 sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box).* Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric

characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.

- **Amortization Year 1 2 3 4 5 Toggle Switch Buttons.** Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**Enter**], or if you have a mouse, click the toggle switch button cell. Notice that an “X” shows up on the cell. If you select the same cell again, the “X” disappears.
- **Project Total Cost Data Input Column (Box).** Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.
- **Amortized Project Cost Column.** Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post fuel oil number 6 sales rates main worksheet screen.

Post Steam Sales Rates

TO COMPUTE THE POST STEAM SALES RATES

1. Press [**F10**] to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.

4. Press **T** for **sTeam**. Notice that at the top right side of the worksheet screen there is a unit label button and the cell pointer is inside the “1. Purchased Quantity (Bills):” data input box.
5. The default unit label is kilopound (KLb). If you want to change the unit labels to one million British thermal units (MBTU), navigate the cell pointer to the unit label button and press [**↓ Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. If you select the unit label button again, notice that the unit labels change back to kilopound (KLb). Every time that you select this button, the unit labels cycle. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**↓ Enter**] the cell pointer jumps to the “1. Purchased Quantity (Bills):” data input box.
6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↓ Enter**]. To access the remainder of the worksheet area, press [**PgDn**].
7. To access the post steam abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and press [**↓ Enter**], or if you have a mouse, move the mouse cursor to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 6 above, except that you do not need to press [**PgDn**] to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press [**Esc**], or if you have a mouse, click the right mouse button.

POST STEAM SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post steam sales rates computations main worksheet screen.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box*. If the installation purchased the steam, enter the post steam total purchased quantity, in kilopound (KLb) or one million British thermal units (MBTU), for the last 12

months.

2. Produced Quantity: *Data Input Box.* If the installation generated its own steam, enter the post steam total produced quantity, in kilopound (KLb) or one million British thermal units (MBTU) , for the last 12 months.

3. Percent Losses: *Data Input Box.* Enter the percentage that represents the post steam system transmission losses.

4. Losses: Indicates the kilopound (KLb) or one million British thermal units (MBTU) quantity from the post steam total consumption (purchased and produced) that is considered as transmission losses.

5. Total Adjusted Consumption: Indicates the post steam total consumption in kilopound (KLb) or one million British thermal units (MBTU) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* If the installation purchased the steam, enter the post steam total purchased cost in dollars (\$) for the last 12 months.

2. Production Cost

a. Cost of Labor/Supervision: *Data Input Box.* Enter the post steam total cost of labor/supervision, in dollars (\$), related to the operation of the post steam system for the last 12 months.

b. Cost of Equipment Rental: *Data Input Box.* Enter the post steam total cost of equipment rental, in dollars (\$), related to the operation of the post steam system for the last 12 months.

c. Make-Up Water

1) Water Consumed: *Data Input Box.* Enter the total water consumption quantity in kilogallons (KGal) used for the production of the steam for the last 12 months.

2) Water Rate: Indicates the current post filtered water sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post filtered water sales rates main worksheet computations.

3) Cost of Make-Up Water: Indicates the total cost of water, in dollars (\$), used for the production of steam.

d. Water/Steam Pumping

1) Electric Power Consumed: *Data Input Box.*

Enter the total electric power consumption quantity in kilowatt-hours (KWh) used by the water/steam pumps for the last 12 months. If your installation does not meter the electric power consumed by the pumps, you may estimate the consumption using the following formula:

$$\text{KWh} = \frac{\text{Pumping Rate (GPM)} \times \text{Average Pumping Head (Ft)} \times \text{Annual Hours of Use (Hrs)} \times 0.746}{3960 \times 0.65}$$

2) Electric Power Rate: Indicates the current post electric power sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post electric power sales rates main worksheet computations.

3) Cost of Water/Steam Pumping: Indicates the total cost of the post electric power, in dollars (\$), used for pumping water/steam related to the production of steam.

e. Electric Power for Heating Water

1) Electric Power Consumed: *Data Input Box.*

Enter the total electric power consumption quantity in kilowatt-hours (KWh) used for heating water to produce steam for the last 12 months.

2) Electric Power Rate: Indicates the current post electric power sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post electric power sales rates main worksheet computations.

3) Cost of Electric Power: Indicates the total cost of the post electric power, in dollars (\$) used for heating water to produce steam.

f. Natural Gas for Heating Water

1) Natural Gas Consumed: *Data Input Box.* Enter

the total natural gas consumption quantity in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one

million British thermal units (MMBTU), therms (Th), or decatherms (Dth), as applicable, used for heating water to produce steam for the last 12 months.

2) Natural Gas Rate: Indicates the current post firm natural gas sales Rate A (or interruptible natural gas sales Rate A when the installation does not purchase firm natural gas). UTILRATE for DOS automatically picked up this rate from the current applicable post natural gas sales rates main worksheet computations.

3) Cost of Natural Gas: Indicates the total cost of the post natural gas, in dollars (\$), used for heating water to produce steam.

g. LPG for Heating Water

1) LPG Consumed: *Data Input Box.* Enter the total liquefied petroleum gas (LPG) consumption quantity in gallons (Gal) or pounds (Lb) used for heating water to produce steam for the last 12 months.

2) LPG Rate: Indicates the current post liquefied petroleum gas sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post liquefied petroleum gas sales rates main worksheet computations.

3) Cost of LPG: Indicates the total cost of the post liquefied petroleum gas, in dollars (\$), used for heating water to produce steam.

h. Fuel Oil for Heating Water

1) Fuel Oil Consumed: *Data Input Box.* Enter the total fuel oil consumption quantity in gallons (Gal) used for heating water to produce steam for the last 12 months.

2) Fuel Oil Rate: Indicates the current post fuel oil number 2 sales Rate A (or fuel oil number 6 sales Rate A when the installation does not purchase fuel oil number 2). UTILRATE for DOS automatically picked up this rate from the current applicable post fuel oil sales rates main worksheet computations.

3) Cost of Fuel Oil: Indicates the total cost of the post fuel oil, in dollars (\$), used for heating water to produce steam.

i. Cost of Consumed Coal: *Data Input Box.* Enter the total cost of the coal, in dollars (\$), consumed and used for heating water to produce steam.

j. Cost of Consumed Wood Pellets: *Data Input Box.*

Enter the total cost of the wood pellets, in dollars (\$), consumed and used for heating water to produce steam.

k. Total Production Cost: Indicates the post steam

total production cost in dollars (\$).

3. Distribution System Operation Cost: *Data Input*

Box. Enter the post steam total operation cost in dollars (\$), related to the steam distribution system, for the last 12 months.

4. Other Operation Cost: *Data Input Box.* Enter any other

operation cost in dollars (\$) related to the operation of the post steam system.

5. Total Cost of Operation: Indicates the post steam total

cost of operation in dollars (\$).

6. Unit Cost of Operation: Indicates the post steam unit cost

of operation in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

III. Cost of Maintenance**1. Normal Maintenance Cost:** *Data Input Box.* Enter the

installations owned post steam system (production and/or distribution) total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Abnormal Maintenance Cost: *Drilldown Screen Button*

Data Input Box. When this button is selected, it accesses the post steam abnormal (non-recurrent) maintenance worksheet screen. It indicates the post steam total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Steam Sales Rates Abnormal Maintenance Worksheet Screen Instructions/ Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter

the post steam system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post steam total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post steam unit cost of maintenance in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.* Using the installation real property records, enter the post steam system present acquisition cost in dollars (\$). Briefly document any system costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation's official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post steam total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post steam system present acquisition cost.

3. System Capacity: *Data Input Box.* Enter the post steam system (production and/or distribution) hour system capacity in kilopounds (KLb) per hour (Hr) or one million British thermal units (MBTU) per hour (Hr).

4. Annual System Capacity: Indicates the post steam annual system capacity in kilopounds (KLb) or one million British thermal units (MBTU).

5. Unit Cost of Capital: Indicates the post steam unit cost of capital in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU) to be included into Rate B. This is based on the annual capital charge and the annual system capacity.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post steam rates unit cost of operation component in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

2. Unit Cost of Maintenance: Indicates the post steam rates unit cost of maintenance component in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

3. RATE A UNIT CHARGE: Indicates the post steam Rate A unit charge in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

4. Unit Cost of Capital: Indicates the post steam Rate B unit cost of capital component in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

5. Subtotal: Indicates the sum of the Rate A unit charge and the unit cost of capital in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

6. Administrative Overhead Cost: Indicates the post steam Rate B administrative overhead cost component in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU). This is fixed at 3% of the sum of the Rate A unit charge and the unit cost of capital.

7. RATE B UNIT CHARGE: Indicates the post steam Rate B unit charge in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

8. STEAM RATE FOR SPACE COOLING, AND SPACE HEATING (Rate A Unit Charge): Indicate the post steam rate in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU) applicable to other utility services rates computations.

POST STEAM SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the steam sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost *Table.* This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post steam sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box).* Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric

characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.

- **Amortization Year 1 2 3 4 5 Toggle Switch Buttons.** Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**↵** **Enter**], or if you have a mouse, click the toggle switch button cell. Notice that an “X” shows up on the cell. If you select the same cell again, the “X” disappears.
- **Project Total Cost Data Input Column (Box).** Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.
- **Amortized Project Cost Column.** Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post steam sales rates main worksheet screen.

Post Hot Water Sales Rates

TO COMPUTE THE POST HOT WATER SALES RATES

1. Press [**F10**] to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **H** for **Hot Water**. Notice that the cell pointer is inside the “1. Purchased Quantity (Bills):” data input box.

5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**Enter**]. To access the remainder of the worksheet area, press [**PgDn**].
6. To access the post hot water abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and press [**Enter**], or if you have a mouse, move the mouse cursor to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 5 above, except that you do not need to press [**PgDn**] to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press [**Esc**], or if you have a mouse, click the right mouse button.

POST HOT WATER SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post hot water sales rates computations main worksheet screen.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* If the installation purchased the hot water, enter the post hot water total purchased quantity, in one million British thermal units (MBTU), for the last 12 months.

2. Produced Quantity: *Data Input Box.* If the installation generated its own hot water, enter the post hot water total produced quantity, in one million British thermal units (MBTU) , for the last 12 months.

3. Percent Losses: *Data Input Box.* Enter the percentage that represents the post hot water system transmission losses.

4. Losses: Indicates the one million British thermal units (MBTU) quantity from the post hot water total consumption (purchased and produced) that is considered as transmission losses.

5. Total Adjusted Consumption: Indicates the post hot water total consumption in one million British thermal units (MBTU) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* If the installation purchased the hot water, enter the post hot water total purchased cost in dollars (\$) for the last 12 months.

2. Production Cost

a. Cost of Labor/Supervision: *Data Input Box.* Enter the post hot water total cost of labor/supervision, in dollars (\$), related to the operation of the post hot water system for the last 12 months.

b. Cost of Equipment Rental: *Data Input Box.* Enter the post hot water total cost of equipment rental, in dollars (\$), related to the operation of the post hot water system for the last 12 months.

c. Make-Up Water

1) Water Consumed: *Data Input Box.* Enter the total water consumption quantity in kilogallons (KGal) used for the production of the hot water for the last 12 months.

2) Water Rate: Indicates the current post filtered water sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post filtered water sales rates main worksheet computations.

3) Cost of Make-Up Water: Indicates the total cost of water, in dollars (\$), used for the production of hot water.

d. Water Pumping

1) Electric Power Consumed: *Data Input Box.* Enter the total electric power consumption quantity in kilowatt-hours (KWh) used by the water pumps for the last 12 months. If your installation does not meter the electric power consumed by the pumps, you may estimate the consumption using the following formula:

$$\text{KWh} = \frac{\text{Pumping Rate (GPM)} \times \text{Average Pumping Head (Ft)} \times \text{Annual Hours of Use (Hrs)} \times 0.746}{3960 \times 0.65}$$

2) Electric Power Rate: Indicates the current post electric power sales Rate A. UTILRATE for DOS automatically picked up this

rate from the current post electric power sales rates main worksheet computations.

3) Cost of Water Pumping: Indicates the total cost of the post electric power, in dollars (\$), used for pumping water related to the production of hot water.

e. Electric Power for Heating Water

1) Electric Power Consumed: *Data Input Box.* Enter the total electric power consumption quantity in kilowatt-hours (KWh) used for heating water to produce hot water for the last 12 months.

2) Electric Power Rate: Indicates the current post electric power sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post electric power sales rates main worksheet computations.

3) Cost of Electric Power: Indicates the total cost of the post electric power, in dollars (\$) used for heating water to produce hot water.

f. Natural Gas for Heating Water

1) Natural Gas Consumed: *Data Input Box.* Enter the total natural gas consumption quantity in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth), as applicable, used for heating water to produce hot water for the last 12 months.

2) Natural Gas Rate: Indicates the current post firm natural gas sales Rate A (or interruptible natural gas sales Rate A when the installation does not purchase firm natural gas). UTILRATE for DOS automatically picked up this rate from the current applicable post natural gas sales rates main worksheet computations.

3) Cost of Natural Gas: Indicates the total cost of the post natural gas, in dollars (\$), used for heating water to produce hot water.

g. LPG for Heating Water

1) LPG Consumed: *Data Input Box.* Enter the total liquefied petroleum gas (LPG) consumption quantity in gallons (Gal) or pounds (Lb) used for heating water to produce hot water for the last 12 months.

2) LPG Rate: Indicates the current post liquefied petroleum gas sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post liquefied petroleum gas sales rates main worksheet computations.

3) Cost of LPG: Indicates the total cost of the post liquefied petroleum gas, in dollars (\$), used for heating water to produce hot water.

h. Fuel Oil for Heating Water

1) Fuel Oil Consumed: *Data Input Box.* Enter the total fuel oil consumption quantity in gallons (Gal) used for heating water to produce hot water for the last 12 months.

2) Fuel Oil Rate: Indicates the current post fuel oil number 2 sales Rate A (or fuel oil number 6 sales Rate A when the installation does not purchase fuel oil number 2). UTILRATE for DOS automatically picked up this rate from the current applicable post fuel oil sales rates main worksheet computations.

3) Cost of Fuel Oil: Indicates the total cost of the post fuel oil, in dollars (\$), used for heating water to produce hot water.

i. Cost of Consumed Coal: *Data Input Box.* Enter the total cost of the coal, in dollars (\$), consumed and used for heating water to produce hot water.

j. Cost of Consumed Wood Pellets: *Data Input Box.* Enter the total cost of the wood pellets, in dollars (\$), consumed and used for heating water to produce hot water.

k. Total Production Cost: Indicates the post hot water total production cost in dollars (\$).

3. Distribution System Operation Cost: *Data Input Box.* Enter the post hot water total operation cost in dollars (\$), related to the hot water distribution system, for the last 12 months.

4. **Other Operation Cost:** *Data Input Box.* Enter any other operation cost in dollars (\$) related to the operation of the post hot water system.

5. **Total Cost of Operation:** Indicates the post hot water total cost of operation in dollars (\$).

6. **Unit Cost of Operation:** Indicates the post hot water unit cost of operation in dollars (\$) per one million British thermal units (MBTU).

III. Cost of Maintenance

1. **Normal Maintenance Cost:** *Data Input Box.* Enter the installations owned post hot water system (production and/or distribution) total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. **Abnormal Maintenance Cost:** *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post hot water abnormal (non-recurrent) maintenance worksheet screen. It indicates the post hot water total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Hot water Sales Rates Abnormal Maintenance Worksheet Screen Instructions/Description” section below for the instructions on entering the abnormal maintenance cost data.

3. **Reimbursed Maintenance Cost:** *Data Input Box.* Enter the post hot water system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. **Total Cost of Maintenance:** Indicates the post hot water total cost of maintenance in dollars (\$).

5. **Unit Cost of Maintenance:** Indicates the post hot water unit cost of maintenance in dollars (\$) per one million British thermal units (MBTU).

IV. Cost of Capital

1. **Acquisition Cost (RP Records):** *Data Input Box.* Using the installation real property records, enter the post hot water system present acquisition cost in dollars (\$). Briefly document any system costs

changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation's official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post hot water total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post hot water system present acquisition cost.

3. System Capacity: *Data Input Box.* Enter the post hot water system (production and/or distribution) hour system capacity in one million British thermal units (MBTU) per hour (Hr).

4. Annual System Capacity: Indicates the post hot water annual system capacity in one million British thermal units (MBTU).

5. Unit Cost of Capital: Indicates the post hot water unit cost of capital in dollars (\$) per one million British thermal units (MBTU) to be included into Rate B. This is based on the annual capital charge and the annual system capacity.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post hot water rates unit cost of operation component in dollars (\$) per one million British thermal units (MBTU).

2. Unit Cost of Maintenance: Indicates the post hot water rates unit cost of maintenance component in dollars (\$) per one million British thermal units (MBTU).

3. RATE A UNIT CHARGE: Indicates the post hot water Rate A unit charge in dollars (\$) per one million British thermal units (MBTU).

4. Unit Cost of Capital: Indicates the post hot water Rate B unit cost of capital component in dollars (\$) per one million British thermal units (MBTU).

5. Subtotal: Indicates the sum of the Rate A unit charge and the unit cost of capital in dollars (\$) per one million British thermal units (MBTU).

6. Administrative Overhead Cost: Indicates the post hot water Rate B administrative overhead cost component in dollars (\$) per one million British thermal units (MBTU). This is fixed at 3% of the sum of the Rate A unit charge and the unit cost of capital.

7. RATE B UNIT CHARGE: Indicates the post hot water Rate B unit charge in dollars (\$) per one million British thermal units (MBTU).

8. HOT WATER RATE FOR SPACE HEATING (Rate A Unit Charge): Indicate the post hot water rate in dollars (\$) per one million British thermal units (MBTU) applicable to other utility services rates computations.

POST HOT WATER SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the hot water sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost Table. This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post hot water sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box).* Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.
- **Amortization Year 1 2 3 4 5** *Toggle Switch Buttons.* Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**Enter**], or if you have a mouse, click the toggle switch button cell. Notice that an "X" shows up on the cell. If you select the same cell again, the "X" disappears.
- **Project Total Cost** *Data Input Column (Box).* Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.

- **Amortized Project Cost Column.** Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post hot water sales rates main worksheet screen.

Post Space Cooling Sales Rates

TO COMPUTE THE POST SPACE COOLING SALES RATES

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **P** for **sPace Cooling**. Notice that at the top right side of the worksheet screen there is a unit label button and the cell pointer is inside the “1. Total Space Area/Volume Served:” data input box.
5. The default unit label is based on space area, square foot (SqFt). If you want the unit label to be based on space volume, one thousand cubic feet (MCF), navigate the cell pointer to the unit label button and press [**↵ Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. If you select the unit label button again, notice that the unit labels change back to square foot (SqFt). Every time that you select this button, the unit labels cycle. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**↵ Enter**] the cell pointer jumps to the “1. Total Space Area/Volume Served:” data input box.
6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵ Enter**]. To access the remainder of the worksheet area, press [**PgDn**].

7. To access the post space cooling abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and press [**Enter**], or if you have a mouse, move the mouse cursor to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 6 above, except that you do not need to press [**PgDn**] to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press [**Esc**], or if you have a mouse, click the right mouse button.

POST SPACE COOLING SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post space cooling sales rates computations main worksheet screen.

I. Total Space Area/Volume Served: *Data Input Box:* Enter the post total space area in square foot (SqFt) or total space volume in one thousand cubic feet (MCF), of all buildings that were cooled for the last 12 months.

II. Cost of Operation

1. Cost of Labor/Supervision: *Data Input Box.* Enter the post space cooling total cost of labor/supervision, in dollars (\$), related to the operation of all post space cooling systems for the last 12 months.

2. Cost of Equipment Rental: *Data Input Box.* Enter the post space cooling total cost of equipment rental, in dollars (\$), related to the operation of all post space cooling systems for the last 12 months.

3. Water for Space Cooling

a. Water Consumed: *Data Input Box.* Enter the total water consumption quantity in kilogallons (KGal) used for space cooling for the last 12 months.

b. Water Rate: Indicates the current post filtered water sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post filtered water sales rates main worksheet computations.

c. Cost of Water: Indicates the total cost of water, in dollars (\$), used for space cooling.

4. Water/Steam Pumping

a. Electric Power Consumed: *Data Input Box.* Enter the total electric power consumption quantity in kilowatt-hours (KWh) used by the water/steam pumps for the last 12 months. If your installation does not meter the electric power consumed by the pumps, you may estimate the consumption using the following formula:

$$\text{KWh} = \frac{\text{Pumping Rate (GPM)} \times \text{Average Pumping Head (Ft)} \times \text{Annual Hours of Use (Hrs)} \times 0.746}{3960 \times 0.65}$$

b. Electric Power Rate: Indicates the current post electric power sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post electric power sales rates main worksheet computations.

c. Cost of Water/Steam Pumping: Indicates the total cost of the post electric power, in dollars (\$), used for pumping water/steam related to space cooling.

5. Electric Power for Space Cooling

a. Electric Power Consumed: *Data Input Box.* Enter the total electric power consumption quantity in kilowatt-hours (KWh) used for space cooling for the last 12 months. Exclude the electric power consumed by the water/steam pumps.

b. Electric Power Rate: Indicates the current post electric power sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post electric power sales rates main worksheet computations.

c. Cost of Electric Power: Indicates the total cost of the post electric power, in dollars (\$), used for space cooling.

6. Natural Gas for Space Cooling

a. Natural Gas Consumed: *Data Input Box.* Enter the total natural gas consumption quantity in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million

British thermal units (MMBTU), therms (Th), or decatherms (Dth), as applicable, used for space cooling for the last 12 months.

b. Natural Gas Rate: Indicates the current post firm natural gas sales Rate A (or interruptible natural gas sales Rate A when the installation does not purchase firm natural gas). UTILRATE for DOS automatically picked up this rate from the current applicable post natural gas sales rates main worksheet computations.

c. Cost of Natural Gas: Indicates the total cost of the post natural gas, in dollars (\$), used for space cooling.

7. LPG for Space Cooling

a. LPG Consumed: *Data Input Box.* Enter the total liquefied petroleum gas (LPG) consumption quantity in gallons (Gal) or pounds (Lb) used for space cooling for the last 12 months.

b. LPG Rate: Indicates the current post liquefied petroleum gas sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post liquefied petroleum gas sales rates main worksheet computations.

c. Cost of LPG: Indicates the total cost of the post liquefied petroleum gas, in dollars (\$), used for space cooling.

8. Steam for Space Cooling

a. Steam Consumed: *Data Input Box.* Enter the total steam consumption quantity in kilopounds (KLb) or one million British thermal units (MBTU) used for space cooling for the last 12 months.

b. Steam Rate: Indicates the current post steam sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post steam sales rates main worksheet computations.

c. Cost of Steam: Indicates the total cost of the post steam, in dollars (\$), used for space cooling.

9. Other Operation Cost: *Data Input Box.* Enter any other operation cost in dollars (\$) related to the operation of the post space cooling systems.

10. Total Cost of Operation: Indicates the post space cooling total cost of operation in dollars (\$).

11. Unit Cost of Operation: Indicates the post space cooling unit cost of operation in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

III. Cost of Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned post space cooling systems total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Abnormal Maintenance Cost: *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post space cooling abnormal (non-recurrent) maintenance worksheet screen. It indicates the post space cooling total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Space Cooling Sales Rates Abnormal Maintenance Worksheet Screen Instructions/ Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter the post space cooling systems total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post space cooling total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post space cooling unit cost of maintenance in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.* Using the installation real property records, enter the post space cooling systems present acquisition cost in dollars (\$). Briefly document any systems costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation’s official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post space cooling total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post space cooling systems present acquisition cost.

3. Unit Cost of Capital: Indicates the post space cooling unit cost of capital in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF) to be included into Rate B. This is based on the annual capital charge and the total space area/volume served.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post space cooling rates seasonal unit cost of operation component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

2. Unit Cost of Maintenance: Indicates the post space cooling rates seasonal unit cost of maintenance component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

3. Rate A Seasonal Unit Charge: Indicates the post space cooling Rate A seasonal unit charge in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF). Usually, the cooling season varies on a yearly basis. UTILRATE for DOS assumes that the cooling season last 6 months.

4. RATE A MONTHLY UNIT CHARGE: Indicates the post space cooling Rate A monthly unit charge (= Rate A Seasonal Unit Charge divided by 6) in dollars (\$) per square foot (SqFt) per month or dollars (\$) per one thousand cubic feet (MCF) per month.

5. Unit Cost of Capital: Indicates the post space cooling Rate B seasonal unit cost of capital component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

6. Subtotal: Indicates the sum of the Rate A seasonal unit charge and the seasonal unit cost of capital in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

7. Administrative Overhead Cost: Indicates the post space cooling Rate B seasonal administrative overhead cost component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF). This is fixed at 3% of the sum of the Rate A seasonal unit charge and the seasonal unit cost of capital.

8. Rate B Seasonal Unit Charge: Indicates the post space cooling Rate B seasonal unit charge in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF). Usually, the cooling season varies

on a yearly basis. UTILRATE for DOS assumes that the cooling season last 6 months.

9. RATE B MONTHLY UNIT CHARGE: Indicates the post space cooling Rate B monthly unit charge (= Rate B Seasonal Unit Charge divided by 6) in dollars (\$) per square foot (SqFt) per month or dollars (\$) per one thousand cubic feet (MCF) per month.

POST SPACE COOLING SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the space cooling sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost *Table.* This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post space cooling sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box).* Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.
- **Amortization Year 1 2 3 4 5** *Toggle Switch Buttons.* Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**Enter**], or if you have a mouse, click the toggle switch button cell. Notice that an "X" shows up on the cell. If you select the same cell again, the "X" disappears.
- **Project Total Cost** *Data Input Column (Box).* Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.

- **Amortized Project Cost Column.** Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.
- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post space cooling sales rates main worksheet screen.

Post Space Heating Sales Rates

TO COMPUTE THE POST SPACE HEATING SALES RATES

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **P** for **Post**.
4. Press **A** for **spAcE Heating**. Notice that at the top right side of the worksheet screen there is a unit label button and the cell pointer is inside the “I. Total Space Area/Volume Served:” data input box.
5. The default unit label is based on space area, square foot (SqFt). If you want the unit label to be based on space volume, one thousand cubic feet (MCF), navigate the cell pointer to the unit label button and press [**↵ Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. If you select the unit label button again, notice that the unit labels change back to square foot (SqFt). Every time that you select this button, the unit labels cycle. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**↵ Enter**] the cell pointer jumps to the “I. Total Space Area/Volume Served:” data input box.
6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵ Enter**]. To access the remainder of the worksheet area, press [**PgDn**].

7. To access the post space heating abnormal maintenance worksheet screen, move the cell pointer with the arrow keys to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and press [**Enter**], or if you have a mouse, move the mouse cursor to the “2. Abnormal Maintenance Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the abnormal maintenance worksheet screen, follow the same procedures stated in step 6 above, except that you do not need to press [**PgDn**] to access the remainder worksheet area since there is no remainder area when using this screen. To exit the abnormal maintenance worksheet screen and go back to the main worksheet screen, press [**Esc**], or if you have a mouse, click the right mouse button.

POST SPACE HEATING SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

The following are the instructions or descriptions of the post space heating sales rates computations main worksheet screen.

I. Total Space Area/Volume Served: *Data Input Box:* Enter the post total space area in square foot (SqFt) or total space volume in one thousand cubic feet (MCF), of all buildings that were heated for the last 12 months.

II. Cost of Operation

1. Cost of Labor/Supervision: *Data Input Box.* Enter the post space heating total cost of labor/supervision, in dollars (\$), related to the operation of all post space heating systems for the last 12 months.

2. Cost of Equipment Rental: *Data Input Box.* Enter the post space heating total cost of equipment rental, in dollars (\$), related to the operation of all post space heating systems for the last 12 months.

3. Water for Space Heating

a. Water Consumed: *Data Input Box.* Enter the total water consumption quantity in kilogallons (KGal) used for space heating for the last 12 months.

b. Water Rate: Indicates the current post filtered water sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post filtered water sales rates main worksheet computations.

c. Cost of Water: Indicates the total cost of water, in dollars (\$), used for space heating.

4. Water/Steam Pumping

a. Electric Power Consumed: *Data Input Box.* Enter the total electric power consumption quantity in kilowatt-hours (KWh) used by the water/steam pumps for the last 12 months. If your installation does not meter the electric power consumed by the pumps, you may estimate the consumption using the following formula:

$$\text{KWh} = \frac{\text{Pumping Rate (GPM)} \times \text{Average Pumping Head (Ft)} \times \text{Annual Hours of Use (Hrs)} \times 0.746}{3960 \times 0.65}$$

b. Electric Power Rate: Indicates the current post electric power sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post electric power sales rates main worksheet computations.

c. Cost of Water/Steam Pumping: Indicates the total cost of the post electric power, in dollars (\$), used for pumping water/steam related to space heating.

5. Electric Power for Space Heating

a. Electric Power Consumed: *Data Input Box.* Enter the total electric power consumption quantity in kilowatt-hours (KWh) used for space heating for the last 12 months. Exclude the electric power consumed by the water/steam pumps.

b. Electric Power Rate: Indicates the current post electric power sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post electric power sales rates main worksheet computations.

c. Cost of Electric Power: Indicates the total cost of the post electric power, in dollars (\$), used for space heating.

6. Natural Gas for Space Heating

a. Natural Gas Consumed: *Data Input Box.* Enter the total natural gas consumption quantity in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million

British thermal units (MMBTU), therms (Th), or decatherms (Dth), as applicable, used for space heating for the last 12 months.

b. Natural Gas Rate: Indicates the current post firm natural gas sales Rate A (or interruptible natural gas sales Rate A when the installation does not purchase firm natural gas). UTILRATE for DOS automatically picked up this rate from the current applicable post natural gas sales rates main worksheet computations.

c. Cost of Natural Gas: Indicates the total cost of the post natural gas, in dollars (\$), used for space heating.

7. LPG for Space Heating

a. LPG Consumed: *Data Input Box.* Enter the total liquefied petroleum gas (LPG) consumption quantity in gallons (Gal) or pounds (Lb) used for space heating for the last 12 months.

b. LPG Rate: Indicates the current post liquefied petroleum gas sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post liquefied petroleum gas sales rates main worksheet computations.

c. Cost of LPG: Indicates the total cost of the post liquefied petroleum gas, in dollars (\$), used for space heating.

8. Fuel Oil for Space Heating

a. Fuel Oil Consumed: *Data Input Box.* Enter the total fuel oil consumption quantity in gallons (Gal) used for space heating for the last 12 months.

b. Fuel Oil Rate: Indicates the current post fuel oil number 2 sales Rate A (or fuel oil number 6 sales Rate A when the installation does not purchase fuel oil number 2). UTILRATE for DOS automatically picked up this rate from the current applicable post fuel oil sales rates main worksheet computations.

c. Cost of Fuel Oil: Indicates the total cost of the post fuel oil, in dollars (\$), used for space heating.

9. Steam for Space Heating

a. Steam Consumed: *Data Input Box.* Enter the total steam consumption quantity in kilopounds (KLb) or one million British thermal units (MBTU) used for space heating for the last 12 months.

b. Steam Rate: Indicates the current post steam sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post steam sales rates main worksheet computations.

c. Cost of Steam: Indicates the total cost of the post steam, in dollars (\$), used for space heating.

10. Hot water for Space Heating

a. Hot water Consumed: *Data Input Box.* Enter the total hot water consumption quantity in one million British thermal units (MBTU) used for space heating for the last 12 months.

b. Hot water Rate: Indicates the current post hot water sales Rate A. UTILRATE for DOS automatically picked up this rate from the current post hot water sales rates main worksheet computations.

c. Cost of Hot water: Indicates the total cost of the post hot water, in dollars (\$), used for space heating.

11. Cost of Consumed Coal: *Data Input Box.* Enter the total cost of the coal, in dollars (\$), consumed and used for space heating.

12. Cost of Consumed Wood Pellets: *Data Input Box.* Enter the total cost of the wood pellets, in dollars (\$), consumed and used for space heating.

13. Other Operation Cost: *Data Input Box.* Enter any other operation cost in dollars (\$) related to the operation of the post space heating systems.

14. Total Cost of Operation: Indicates the post space heating total cost of operation in dollars (\$).

15. Unit Cost of Operation: Indicates the post space heating unit cost of operation in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

III. Cost of Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned post space heating systems total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Abnormal Maintenance Cost: *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the post space heating abnormal (non-recurrent) maintenance worksheet screen. It indicates the post space heating total abnormal maintenance cost in dollars (\$) to be phased-in into the rates as computed in the abnormal maintenance worksheet screen. See the “Post Space heating Sales Rates Abnormal Maintenance Worksheet Screen Instructions/ Description” section below for the instructions on entering the abnormal maintenance cost data.

3. Reimbursed Maintenance Cost: *Data Input Box.* Enter the post space heating systems total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

4. Total Cost of Maintenance: Indicates the post space heating total cost of maintenance in dollars (\$).

5. Unit Cost of Maintenance: Indicates the post space heating unit cost of maintenance in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

IV. Cost of Capital

1. Acquisition Cost (RP Records): *Data Input Box.* Using the installation real property records, enter the post space heating systems present acquisition cost in dollars (\$). Briefly document any systems costs changes due to system expansion and/or replacement and attach a copy of the explanatory document to the installation’s official utilities sales tariff book.

2. Annual Capital Charge: Indicates the post space heating total annual capital charge in dollars (\$) to be incorporated into Rate B. This is a mandatory 10% of the post space heating systems present acquisition cost.

3. Unit Cost of Capital: Indicates the post space heating unit cost of capital in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand

cubic feet (MCF) to be included into Rate B. This is based on the annual capital charge and the total space area/volume served.

V. Rates Summary

1. Unit Cost of Operation: Indicates the post space heating rates seasonal unit cost of operation component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

2. Unit Cost of Maintenance: Indicates the post space heating rates seasonal unit cost of maintenance component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

3. Rate A Seasonal Unit Charge: Indicates the post space heating Rate A seasonal unit charge in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF). Usually, the heating season varies on a yearly basis. UTILRATE for DOS assumes that the heating season last 6 months.

4. RATE A MONTHLY UNIT CHARGE: Indicates the post space heating Rate A monthly unit charge (= Rate A Seasonal Unit Charge divided by 6) in dollars (\$) per square foot (SqFt) per month or dollars (\$) per one thousand cubic feet (MCF) per month.

5. Unit Cost of Capital: Indicates the post space heating Rate B seasonal unit cost of capital component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

6. Subtotal: Indicates the sum of the Rate A seasonal unit charge and the seasonal unit cost of capital in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

7. Administrative Overhead Cost: Indicates the post space heating Rate B seasonal administrative overhead cost component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF). This is fixed at 3% of the sum of the Rate A seasonal unit charge and the seasonal unit cost of capital.

8. Rate B Seasonal Unit Charge: Indicates the post space heating Rate B seasonal unit charge in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF). Usually, the heating season varies on a yearly basis. UTILRATE for DOS assumes that the heating season last 6 months.

9. RATE B MONTHLY UNIT CHARGE: Indicates the post space heating Rate B monthly unit charge ($= \text{Rate B Seasonal Unit Charge divided by } 6$) in dollars (\$) per square foot (SqFt) per month or dollars (\$) per one thousand cubic feet (MCF) per month.

POST SPACE HEATING SALES RATES ABNORMAL MAINTENANCE WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION

NOTE: Abnormal maintenance costs are non-recurrent maintenance costs.

I. Unamortized Abnormal Maintenance Cost: *Data Input Box.* Enter the abnormal maintenance cost in dollars (\$) that, under the installation's judgment, will not abnormally vary (or impact) the space heating sales rates. Therefore, the cost can be completely phased-in into the rates.

II. Amortized Abnormal Maintenance Cost *Table.* This table is used to enter project cost information of abnormal maintenance projects which costs, under the installation's judgment, will impact the post space heating sales rates significantly. This table spreads (or phases-in) these costs throughout a 5 years period. The following are the instructions/description of each table item:

- **Project Number** *Data Input Column (Box).* Enter up to 5 maintenance project number identifiers (up to 11 alphanumeric characters per project) of abnormal maintenance projects to be phased-in in a period of 5 years.
- **Amortization Year 1 2 3 4 5** *Toggle Switch Buttons.* Select the amortization year applicable to the current rates computations. To toggle any of the amortization year, move the cell pointer to the toggle switch button cell which is found at the intersection of the project number row and the applicable year column, and press [**Enter**], or if you have a mouse, click the toggle switch button cell. Notice that an "X" shows up on the cell. If you select the same cell again, the "X" disappears.
- **Project Total Cost** *Data Input Column (Box).* Enter up to 5 total maintenance costs in dollars (\$) of projects that you want the costs to be spread through 5 years. NOTE: Do not divide the total maintenance cost by 5, the program will do the division for you.
- **Amortized Project Cost** *Column.* Indicates the amortization cost (project total cost divided by 5) of each project that will be amortized and phased-in into the rates.

- **Total Amortized Abnormal Maintenance Cost:** Indicates the total abnormal maintenance cost in dollars (\$) of all projects that will be amortized and phased-in into the rates.

III. TOTAL ABNORMAL MAINTENANCE COST: Indicates the total abnormal maintenance cost in dollars (\$), unamortized and amortized, that will be incorporated into the current rates computations. This dollar amount also appears in the “2. Abnormal Maintenance Cost:” drilldown screen button data input box found at the post space heating sales rates main worksheet screen.

Computing the Family Housing Rates under Family Housing Configuration No. 1

As you are probably already aware, under the family housing configuration no. 1, you do not enter data in any of the family housing worksheet screens. This is so because under the default family housing configuration, the program considers family housing as being part of the post as a whole. All utilities consumptions and costs information is picked-up by the program from the post utilities rates computations. Therefore under this configuration, you will be interfacing with the family housing utility main worksheet screens only for viewing purpose.

UTILRATE for DOS generates rates computations for 11 family housing utilities: electric power, filtered water, sewage, refuse collection/disposal, firm natural gas, liquefied petroleum gas (LPG), fuel oil no. 2, steam, hot water, space cooling, and space heating. The rates for the first nine utilities are based on consumption and the last two are based on space area or volume.

Under the family housing configuration no. 1, all the family housing utilities main worksheet screens basically follow the same rate computation structure. The family housing space cooling and space heating main worksheet screens vary lightly from the rest of the family housing main worksheet screens.

Family Housing Utilities Main Worksheet Screens Description under Family Housing Configuration No. 1 (do not apply to space cooling or space heating)

I. Total Adjusted Consumption: Indicates the specific post utility total consumption, in the utility applicable consumption unit, adjusted for losses in transmission or infiltration.

II. Unit Cost of Operation: Indicates the specific post utility unit cost of operation in dollars (\$) per the applicable consumption unit.

III. Cost of Normal Maintenance

1. Normal Maintenance Cost: Indicates the specific post utility total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Reimbursed Maintenance Cost: Indicates the specific post utility system total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. Total Cost of Maintenance: Indicates the specific family housing utility total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. Unit Cost of Normal Maintenance: Indicates the specific family housing unit cost of normal maintenance in dollars (\$) per the applicable consumption unit.

III. Rates Summary

1. Unit Cost of Operation: Indicates the specific family housing utility rate unit cost of operation component in dollars (\$) per the applicable consumption unit.

2. Unit Cost of Normal Maintenance: Indicates the specific family housing utility rate unit cost of normal maintenance component in dollars (\$) per the applicable consumption unit.

3. RATE H UNIT CHARGE: Indicates the specific family housing Rate H unit charge in dollars (\$) per the applicable consumption unit.

Family Housing Space Cooling and Space Heating Main Worksheet Screens Description under Family Housing Configuration No. 1

I. Total Space Area/Volume Served: Indicates the post total space area in square foot (SqFt) or total space volume in one thousand cubic feet (MCF), of all buildings that were cooled or heated for the last 12 months.

II. Unit Cost of Operation: Indicates the post space cooling or space heating unit cost of operation in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

III. Cost of Normal Maintenance

1. Normal Maintenance Cost: Indicates the post space cooling or space heating total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Reimbursed Maintenance Cost: Indicates the post space cooling system or space heating system total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. Total Cost of Maintenance: Indicates the family housing space cooling or space heating total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. Unit Cost of Normal Maintenance: Indicates the family housing space cooling or space heating unit cost of normal maintenance in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

III. Rates Summary

1. Unit Cost of Operation: Indicates the family housing space cooling or space heating rate seasonal unit cost of operation component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

2. Unit Cost of Normal Maintenance: Indicates the family housing space cooling or space heating rate seasonal unit cost of normal maintenance component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

3. Rate H Seasonal Unit Charge: Indicates the family housing space cooling or space heating Rate H seasonal unit charge in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

4. RATE H MONTHLY UNIT CHARGE: Indicates the family housing space cooling or space heating Rate H monthly unit charge in dollars (\$) per square foot (SqFt) per month or dollars (\$) per one thousand cubic feet (MCF) per month.

Family Housing Electric Power Sales Rate

TO SEE THE FAMILY HOUSING ELECTRIC POWER SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 1

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **E** for **Electric Power**.
5. Press **[PgDn]** to see the rest of the worksheet area.

Family Housing Filtered Water Sales Rate

TO SEE THE FAMILY HOUSING FILTERED WATER SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 1

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **F** for **Filtered Water**.
5. Press **[PgDn]** to see the rest of the worksheet area.

Family Housing Sewage Sales Rate

TO SEE THE FAMILY HOUSING SEWAGE SALES RATE COMPUTATION
UNDER FAMILY HOUSING CONFIGURATION NO. 1

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **S** for **Sewage**.
5. Press **[PgDn]** to see the rest of the worksheet area.

Family Housing Refuse Collection/Disposal Sales Rate

TO SEE THE FAMILY HOUSING REFUSE COLLECTION/DISPOSAL
SALES RATE COMPUTATION UNDER FAMILY HOUSING
CONFIGURATION NO. 1

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **R** for **Refuse Collection/Disposal**.
5. Press **[PgDn]** to see the rest of the worksheet area.

Family Housing Firm Natural Gas Sales Rate

TO SEE THE FAMILY HOUSING FIRM NATURAL GAS SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 1

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **N** for **firm Natural Gas**.
5. Press **[PgDn]** to see the rest of the worksheet area.

NOTE: The post interruptible natural gas figures are automatically used for the computation of the family housing firm natural gas sales rate when the installation does not purchase firm natural gas.

Family Housing Liquefied Petroleum Gas (LPG) Sales Rate

TO SEE THE FAMILY HOUSING LIQUEFIED PETROLEUM GAS (LPG)
SALES RATE COMPUTATION UNDER FAMILY HOUSING
CONFIGURATION NO. 1

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.

3. Press **F** for **Family Housing**.
4. Press **L** for **LPG**.
5. Press **[PgDn]** to see the rest of the worksheet area.

Family Housing Fuel Oil No. 2 Sales Rate

TO SEE THE FAMILY HOUSING FUEL OIL NO. 2 SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 1

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **2** for **fuel oil number 2**.
5. Press **[PgDn]** to see the rest of the worksheet area.

NOTE: The post fuel oil number 6 figures are automatically used for the computation of the family housing fuel oil number 2 sales rate when the installation does not purchase fuel oil number 2.

Family Housing Steam Sales Rate

TO SEE THE FAMILY HOUSING STEAM SALES RATE COMPUTATION
UNDER FAMILY HOUSING CONFIGURATION NO. 1

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **T** for **sTeam**.
5. Press **[PgDn]** to see the rest of the worksheet area.

Family Housing Hot Water Sales Rate

TO SEE THE FAMILY HOUSING HOT WATER SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 1

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **H** for **Hot Water**.
5. Press **[PgDn]** to see the rest of the worksheet area.

Family Housing Space Cooling Sales Rate

TO SEE THE FAMILY HOUSING SPACE COOLING SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 1

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **P** for **sPace Cooling**.
5. Press **[PgDn]** to see the rest of the worksheet area.

Family Housing Space Heating Sales Rate

TO SEE THE FAMILY HOUSING SPACE HEATING SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 1

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **A** for **spAce Heating**.
5. Press **[PgDn]** to see the rest of the worksheet area.

Computing the Family Housing Rates under Family Housing Configuration No. 2

You use the family housing configuration no. 2 when the utility is purchased expressly for family housing and the installations wants to treat family housing apart from the post. Under this configuration, the Utilities Services/Sales Officer or the preparer will need to enter all utilities consumptions and costs information related to family housing in addition to the information for the post.

You will be interfacing basically with one worksheet screen, the family housing utility's main screen, when inputting data for family housing, except for filtered water and the sewage. For computing the family housing filtered water and sewage rates you may need to interface with two screens: the family housing utility's main worksheet screen and its power for pumping screen.

UTILRATE for DOS generates rates computations for 11 family housing utilities: electric power, filtered water, sewage, refuse collection/disposal, firm natural gas, liquefied petroleum gas (LPG), fuel oil no. 2, steam, hot water, space cooling, and space heating. The rates for the first nine utilities are based on consumption and the last two are based on space area or volume.

Family Housing Electric Power Sales Rate

TO COMPUTE THE FAMILY HOUSING ELECTRIC POWER SALES RATE
UNDER FAMILY HOUSING CONFIGURATION NO. 2

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **E** for **Electric Power**. Notice that the cell pointer is inside the "1. Purchased Quantity (Bills) :" data input box.
5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵** **Enter**]. To access the remainder of the worksheet area, press [**PgDn**].

FAMILY HOUSING ELECTRIC POWER SALES RATE MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING CONFIGURATION NO. 2

The following are the instructions or descriptions of the family housing electric power sales rate computations main worksheet screen under the family housing configuration no. 2.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* Enter the family housing electric power total purchased quantity, in kilowatt-hours (KWh), for the last 12 months.

2. Percent Losses: *Data Input Box.* Enter the percentage that represents the family housing electric power system transmission losses. You may estimate the system percent losses to 5% (based on 1% for substations, 2% for lines, and 2% for distribution transformers). These percentages may be revised to reflect more closely your system.

3. Losses: Indicates the kilowatt-hours (KWh) quantity from the family housing electric power total consumption that is considered as transmission losses.

4. Total Adjusted Consumption: Indicates the family housing electric power total consumption in kilowatt-hours (KWh) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* Enter the family housing electric power total purchased cost in dollars (\$) for the last 12 months.

2. Distribution System Operation Cost: *Data Input Box.* Enter the family housing electric power total operation cost in dollars (\$), related to the family housing electric power distribution system, for the last 12 months.

3. Total Cost of Operation: Indicates the family housing electric power total cost of operation in dollars (\$).

4. Unit Cost of Operation: Indicates the family housing electric power unit cost of operation in dollars (\$) per kilowatt-hour (KWh).

III. Cost of Normal Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned family housing electric power system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Reimbursed Maintenance Cost: *Data Input Box.* Enter the family housing electric power system total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. Total Cost of Maintenance: Indicates the family housing electric power total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. Unit Cost of Normal Maintenance: Indicates the family housing electric power unit cost of normal maintenance in dollars (\$) per kilowatt-hour (KWh).

IV. Rates Summary

1. Unit Cost of Operation: Indicates the family housing electric power rate unit cost of operation component in dollars (\$) per kilowatt-hour (KWh).

2. Unit Cost of Normal Maintenance: Indicates the family housing electric power rate unit cost of normal maintenance component in dollars (\$) per kilowatt-hour (KWh).

3. RATE H UNIT CHARGE: Indicates the family housing electric power Rate H unit charge in dollars (\$) per kilowatt-hour (Kwh).

Family Housing Filtered Water Sales Rate

TO COMPUTE THE FAMILY HOUSING FILTERED WATER SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 2

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.

4. Press **F** for **Filtered Water**.
5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵ Enter**]. To access the remainder of the worksheet area, press [**PgDn**].
6. To access the family housing cost of pumping filtered water worksheet screen, move the cell pointer with the arrow keys to the “3. Pumping Cost:” drilldown screen button data input box and press [**↵ Enter**], or if you have a mouse, move the mouse cursor to the “3. Pumping Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the cost for pumping filtered water worksheet screen, follow the same procedures stated in step 5 above. To exit the cost for pumping filtered water worksheet screen and go back to the main worksheet screen, press [**Esc**], or if you have a mouse, click the right mouse button.

FAMILY HOUSING FILTERED WATER SALES RATES MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING CONFIGURATION NO. 2

The following are the instructions or descriptions of the family housing filtered water sales rates computations main worksheet screen under family housing configuration 2.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box*. Enter the family housing filtered water total purchased quantity, in kilogallons (KGal), for the last 12 months.

2. Percent Losses: *Data Input Box*. Enter the percentage that represents the family housing filtered water system transmission losses. Normal losses may be estimated at 5%. This percentage may be revised to reflect more closely your system.

3. Losses: Indicates the kilogallons (KGal) quantity from the family housing filtered water total consumption that is considered as transmission losses.

4. Total Adjusted Consumption: Indicates the family housing filtered water total consumption in kilogallons (KGal) adjusted for losses in transmission.

II. Cost of Operation

1. **Purchase Cost (Bill):** *Data Input Box.* Enter the family housing filtered water total purchased cost in dollars (\$) for the last 12 months.

2. **Distribution System Operation Cost:** *Data Input Box.* Enter the family housing filtered water total operation cost in dollars (\$), related to the family housing filtered water distribution system, for the last 12 months.

3. **Pumping Cost:** *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the family housing cost for pumping filtered water worksheet screen. It indicates the family housing electric power cost for pumping filtered water in dollars (\$) to be included into the rate as computed in the cost for pumping filtered water worksheet screen. See the “Family Housing Cost of Pumping Filtered Water Worksheet Screen Instructions/Description under Family Housing Configuration No. 2” section below for the instructions on entering the pumping cost data.

4. **Total Cost of Operation:** Indicates the family housing filtered water total cost of operation in dollars (\$).

5. **Unit Cost of Operation:** Indicates the family housing filtered water unit cost of operation in dollars (\$) per kilogallon (KGal).

III. Cost of Normal Maintenance

1. **Normal Maintenance Cost:** *Data Input Box.* Enter the installations owned family housing filtered water system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. **Reimbursed Maintenance Cost:** *Data Input Box.* Enter the family housing filtered water system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. **Total Cost of Normal Maintenance:** Indicates the family housing filtered water total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. **Unit Cost of Normal Maintenance:** Indicates the family housing filtered water unit cost of normal maintenance in dollars (\$) per kilogallon (KGal).

IV. Rates Summary

1. Unit Cost of Operation: Indicates the family housing filtered water rate unit cost of operation component in dollars (\$) per kilogallon (KGal).

2. Unit Cost of Normal Maintenance: Indicates the family housing filtered water rate unit cost of normal maintenance component in dollars (\$) per kilogallon (KGal).

3. RATE H UNIT CHARGE: Indicates the family housing filtered water Rate H unit charge in dollars (\$) per kilogallon (KGal).

FAMILY HOUSING COST OF PUMPING FILTERED WATER WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING CONFIGURATION NO. 2

1. Electric Consumption

a. Metered *Data Input Box.* Enter the electric power total consumption quantity in kilowatt-hours (KWh) used by metered pumps for the last 12 months.

b. Unmetered Indicates the electric power total estimated usage (consumption) in kilowatt-hours (KWh) used by unmetered pumps for the last 12 months as computed in the “4. Estimated Usage for Unmetered Pumps:” block that follows.

c. Total Indicates the total electric power consumption in kilowatt-hours (KWh), metered and unmetered, used for pumping the family housing filtered water for the last 12 months.

2. Electric Power Rate for Pumping Indicates the current family housing electric power sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing electric power sales rate main worksheet computations.

3. TOTAL COST OF PUMPING FILTERED WATER Indicates the total family housing electric power cost for pumping filtered water in dollars (\$). This dollar amount also appears in the “3. Pumping Cost:” drilldown screen button data input box found at the family housing filtered water sales rate main worksheet screen.

4. Estimated Usage for Unmetered Pumps: This block allows you to estimate the electric power consumption of up to 10 pumps (pump blocks a through j). UTILRATE for DOS assumes a 65% pump efficiency in the formula to estimate the electric power consumption. This formula is shown at the bottom of the family housing cost of pumping filtered water worksheet.

a. Pump (No.____/Location) *Data Input Box.* Enter a unique pump identifier or location (up to 16 alphanumeric characters) for the specific pump that you want to estimate the electric power consumption.

1. Average Pumping Head *Data Input Box.* Enter the average pumping head in feet (Ft) applicable to the specific pump that you want to estimate the electric power consumption.

2. Pumping Rate *Data Input Box.* Enter the pumping rate in gallons per minute (GPM) applicable to the specific pump that you want to estimate the electric power consumption.

3. Annual Hours of Use *Data Input Box.* Enter the period of time in hours (Hrs) that the specific pump was operational during the last 12 months.

4. Total KWh Consumed Indicates the total electric power in kilowatt-hours (KWh) consumed by the specific pump.

Family Housing Sewage Sales Rate

TO COMPUTE THE FAMILY HOUSING SEWAGE SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 2

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **S** for **Sewage**.
5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press **[Enter]**. To access the remainder of the worksheet area, press **[PgDn]**.

6. To access the family housing cost of pumping sewage worksheet screen, move the cell pointer with the arrow keys to the “3. Pumping Cost:” drilldown screen button data input box and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the “3. Pumping Cost:” drilldown screen button data input box and click the left mouse button. To navigate and enter data in the cost for pumping sewage worksheet screen, follow the same procedures stated in step 5 above. To exit the cost for pumping sewage worksheet screen and go back to the main worksheet screen, press [**Esc**], or if you have a mouse, click the right mouse button.

FAMILY HOUSING SEWAGE SALES RATE MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING CONFIGURATION NO. 2

The following are the instructions or descriptions of the family housing sewage sales rate computations main worksheet screen under the family housing configuration no. 2.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* Enter the family housing sewage total purchased quantity, in kilogallons (KGal), for the last 12 months.

2. Percent Infiltration: *Data Input Box.* Enter the percentage that represents the family housing sewage system collection system infiltration.

3. Sewage Infiltration: Indicates the kilogallons (KGal) quantity from the family housing sewage total consumption that is considered as infiltration.

4. Total Adjusted Consumption: Indicates the family housing sewage total consumption in kilogallons (KGal) adjusted for infiltration.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* Enter the family housing sewage total purchased cost in dollars (\$) for the last 12 months.

2. Collection System Operation Cost: *Data Input Box.* Enter the family housing sewage total operation cost in dollars (\$), related to the family housing sewage collection system, for the last 12 months.

3. Pumping Cost: *Drilldown Screen Button Data Input Box.* When this button is selected, it accesses the family housing cost for pumping

sewage worksheet screen. It indicates the family housing electric power cost for pumping sewage in dollars (\$) to be included into the rates as computed in the cost for pumping sewage worksheet screen. See the “Family Housing Cost of Pumping Sewage Worksheet Screen Instructions/ Description under Family Housing Configuration No. 2” section below for the instructions on entering the pumping cost data.

4. Total Cost of Operation: Indicates the family housing sewage total cost of operation in dollars (\$).

5. Unit Cost of Operation: Indicates the family housing sewage unit cost of operation in dollars (\$) per kilogallon (KGal).

III. Cost of Normal Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned family housing sewage system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Reimbursed Maintenance Cost: *Data Input Box.* Enter the family housing sewage system total maintenance cost in dollars (\$) that are reimbursed to the installation’s Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. Total Cost of Maintenance: Indicates the family housing sewage total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. Unit Cost of Normal Maintenance: Indicates the family housing sewage unit cost of normal maintenance in dollars (\$) per kilogallon (KGal).

IV. Rates Summary

1. Unit Cost of Operation: Indicates the family housing sewage rate unit cost of operation component in dollars (\$) per kilogallon (KGal).

2. Unit Cost of Normal Maintenance: Indicates the family housing sewage rate unit cost of normal maintenance component in dollars (\$) per kilogallon (KGal).

3. RATE H UNIT CHARGE: Indicates the family housing sewage Rate H unit charge in dollars (\$) per kilogallon (KGal).

FAMILY HOUSING COST OF PUMPING SEWAGE WORKSHEET SCREEN
INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING
CONFIGURATION NO. 2

1. Electric Consumption

a. Metered *Data Input Box.* Enter the electric power total consumption quantity in kilowatt-hours (KWh) used by metered pumps for the last 12 months.

b. Unmetered Indicates the electric power total estimated usage (consumption) in kilowatt-hours (KWh) used by unmetered pumps for the last 12 months as computed in the “4. Estimated Usage for Unmetered Pumps:” block that follows.

c. Total Indicates the total electric power consumption in kilowatt-hours (KWh), metered and unmetered, used for pumping the family housing sewage for the last 12 months.

2. Electric Power Rate for Pumping Indicates the current family housing electric power sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing electric power sales rates main worksheet computations.

3. TOTAL COST OF PUMPING SEWAGE Indicates the total family housing electric power cost for pumping sewage in dollars (\$). This dollar amount also appears in the “3. Pumping Cost:” drilldown screen button data input box found at the family housing sewage sales rates main worksheet screen.

4. Estimated Usage for Unmetered Pumps: This block allows you to estimate the electric power consumption of up to 10 pumps (pump blocks a through j). UTILRATE for DOS assumes a 65% pump efficiency in the formula to estimate the electric power consumption. This formula is shown at the bottom of the family housing cost of pumping sewage worksheet.

a. Pump (No.____/Location) *Data Input Box.* Enter a unique pump identifier or location (up to 16 alphanumeric characters) for the specific pump that you want to estimate the electric power consumption.

1. Average Pumping Head *Data Input Box.* Enter the average pumping head in feet (Ft) applicable to the specific pump that you want to estimate the electric power consumption.

2. Pumping Rate *Data Input Box.* Enter the pumping rate in gallons per minute (GPM) applicable to the specific pump that you want to estimate the electric power consumption.

3. Annual Hours of Use *Data Input Box.* Enter the period of time in hours (Hrs) that the specific pump was operational during the last 12 months.

4. Total KWh Consumed Indicates the total electric power in kilowatt-hours (KWh) consumed by the specific pump.

Family Housing Refuse Collection/Disposal Sales Rate

TO COMPUTE THE FAMILY HOUSING REFUSE COLLECTION/
DISPOSAL SALES RATE COMPUTATION UNDER FAMILY HOUSING
CONFIGURATION NO. 2

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **R** for **Refuse Collection/Disposal**. Notice that at the top right side of the worksheet screen there is a unit label button and the cell pointer is inside the "1. In-House:" data input box.
5. The default unit label is cubic yard (CuYd). If you want to change the unit labels to ton (Ton), navigate the cell pointer to the unit label button and press [**Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. If you select the unit label button again, notice that the unit labels change back to cubic yard (CuYd). Every time that you select this button, the unit labels cycle. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**Enter**] the cell pointer jumps to the "1. In-House:" data input box.
6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**Enter**]. To access the remainder of the worksheet area, press [**PgDn**].

FAMILY HOUSING REFUSE COLLECTION/DISPOSAL SALES RATE MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING CONFIGURATION NO. 2

The following are the instructions or descriptions of the family housing refuse collection/disposal sales rate computations main worksheet screen under the family housing configuration no. 2.

I. Quantity Collected and Disposed

1. In-House: *Data Input Box.* If the installation uses in-house resources to collect and dispose the family housing refuse, enter the family housing refuse total quantity collected and disposed by the in-house resources, in cubic yards (CuYd) or tons (Ton), for the last 12 months.

2. Contracted: *Data Input Box.* If the installation contracted for refuse collection and disposal services, enter the family housing refuse total quantity collected and disposed by the contractor, in cubic yards (CuYd) or tons (Ton), for the last 12 months.

3. Other: *Data Input Box.* If the installation uses other resources to collect and dispose the family housing refuse, enter the family housing refuse total quantity collected and disposed using other resources, in cubic yards (CuYd) or tons (Ton), for the last 12 months.

4. Total Quantity Collected and Disposed: Indicates the family housing refuse total quantity collected and disposed in cubic yards (CuYd) or tons (Ton) for the last 12 months.

II. Cost of Operation

1. In-House Operation Cost: *Data Input Box.* If the installation uses in-house resources to collect and dispose the family housing refuse, enter the family housing refuse collection and disposal total in-house operation cost in dollars (\$) for the last 12 months.

2. Contracted Operation Cost: *Data Input Box.* If the installation contracted for refuse collection and disposal services, enter the family housing refuse collection and disposal total contract cost in dollars (\$) applicable to the last 12 months.

3. Other Operation Cost: *Data Input Box.* If the installation uses other resources to collect and dispose the family housing refuse, enter the family housing refuse collection and disposal total other resources operation cost in dollars (\$) for the last 12 months.

4. Total Cost of Operation: Indicates the family housing refuse collection and disposal total cost of operation in dollars (\$).

5. Unit Cost of Operation: Indicates the family housing refuse collection and disposal unit cost of operation in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

III. Cost of Normal Maintenance

1. In-House Maintenance Cost: *Data Input Box.* If the installation uses in-house resources to maintain the family housing refuse collection and disposal system, enter the family housing refuse collection and disposal total in-house normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Contracted Maintenance Cost: *Data Input Box.* If the installation contracted for the maintenance of the family housing refuse collection and disposal system, enter the family housing refuse collection and disposal total normal maintenance contract cost in dollars (\$) applicable to the last 12 months.

3. Other Maintenance Cost: *Data Input Box.* If the installation uses other resources to maintain the family housing refuse collection and disposal system, enter the family housing refuse collection and disposal total other resources normal maintenance cost in dollars (\$) for the last 12 months.

4. Reimbursed Maintenance Cost: *Data Input Box.* Enter the family housing refuse collection and disposal system total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

5. Total Cost of Maintenance: Indicates the family housing refuse collection and disposal total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

6. Unit Cost of Normal Maintenance: Indicates the family housing refuse collection and disposal unit cost of normal maintenance in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

IV. Rates Summary

1. Unit Cost of Operation: Indicates the family housing refuse collection and disposal rate unit cost of operation component in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

2. Unit Cost of Normal Maintenance: Indicates the family housing refuse collection and disposal rate unit cost of normal maintenance component in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

3. RATE H UNIT CHARGE FOR COLLECTION: Indicates the family housing refuse collection and disposal Rate H unit charge in dollars (\$) per cubic yard (CuYd) or dollars (\$) per ton (Ton).

Family Housing Firm Natural Gas Sales Rate

TO COMPUTE THE FAMILY HOUSING FIRM NATURAL GAS SALES RATE COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 2

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **N** for **firm Natural Gas**. Notice that at the top right side of the worksheet screen there is a unit label button, and the cell pointer is inside the "1. Purchased Quantity (Bills):" data input box.
5. The default unit label is decatherm (Dth). If you want to change the unit labels to cubic foot (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal unit (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), or therm (Th), navigate the cell pointer to the unit label button and press [**↵** **Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. Repeat this procedure as many times as needed to get the desired unit label. Every time that you select this button, the unit labels cycle among the unit labels. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**↵** **Enter**] the cell pointer jumps to the "1. Purchased Quantity (Bills):" data input box.
6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where

you want to enter the information. Type the information and press [**⏏** **Enter**].
To access the remainder of the worksheet area, press [**PgDn**].

FAMILY HOUSING FIRM NATURAL GAS SALES RATE MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING CONFIGURATION NO. 2

The following are the instructions or descriptions of the family housing firm natural gas sales rate computations main worksheet screen under the family housing configuration no. 2.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* Enter the family housing firm natural gas total purchased quantity, in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth) for the last 12 months.

2. Percent Losses: *Data Input Box.* Enter the percentage that represents the family housing firm natural gas system transmission losses. Normal losses may be estimated at 5%. These percentages may be revised to reflect more closely your system.

3. Losses: Indicates the cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth) quantity from the family housing firm natural gas total consumption that is considered as transmission losses.

4. Total Adjusted Consumption: Indicates the family housing firm natural gas total consumption in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* Enter the family housing firm natural gas total purchased cost in dollars (\$) for the last 12 months.

2. Distribution System Operation Cost: *Data Input*

Box. Enter the family housing firm natural gas total operation cost in dollars (\$), related to the family housing firm natural gas distribution system, for the last 12 months.

3. Total Cost of Operation:

Indicates the family housing firm natural gas total cost of operation in dollars (\$).

4. Unit Cost of Operation:

Indicates the family housing firm natural gas unit cost of operation in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

III. Cost of Normal Maintenance**1. Normal Maintenance Cost:**

Data Input Box. Enter the installations owned family housing firm natural gas system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Reimbursed Maintenance Cost:

Data Input Box. Enter the family housing firm natural gas system total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. Total Cost of Maintenance:

Indicates the family housing firm natural gas total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. Unit Cost of Normal Maintenance:

Indicates the family housing firm natural gas unit cost of normal maintenance in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

IV. Rates Summary

1. Unit Cost of Operation: Indicates the family housing firm natural gas rate unit cost of operation component in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

2. Unit Cost of Normal Maintenance: Indicates the family housing firm natural gas rate unit cost of normal maintenance component in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

3. RATE H UNIT CHARGE: Indicates the family housing firm natural gas Rate H unit charge in dollars (\$) per cubic foot (CF), dollars (\$) per one hundred cubic feet (CCF), dollars (\$) per one thousand cubic feet (MCF), dollars (\$) per one million cubic feet (MMCF), dollars (\$) per British thermal unit (BTU), dollars (\$) per one thousand British thermal units (MBTU), dollars (\$) per one million British thermal units (MMBTU), dollars (\$) per therm (Th), or dollars (\$) per decatherm (Dth).

Family Housing Liquefied Petroleum Gas (LPG) Sales Rate

TO COMPUTE THE FAMILY HOUSING LIQUEFIED PETROLEUM GAS (LPG) SALES RATE COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 2

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **L** for **LPG**. Notice that at the top right side of the worksheet screen there is a unit label button, and the cell pointer is inside the "1. Purchased Quantity (Bills):" data input box.

5. The default unit label is gallon (Gal). If you want to change the unit labels to pound (Lb), navigate the cell pointer to the unit label button and press [**⏏ Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. If you select the unit label button again, notice that the unit labels change back to gallon (Gal). Every time that you select this button, the unit labels cycle. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**⏏ Enter**] the cell pointer jumps to the “1. Purchased Quantity (Bills):” data input box.
6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**⏏ Enter**]. To access the remainder of the worksheet area, press [**PgDn**].

FAMILY HOUSING LIQUEFIED PETROLEUM GAS (LPG) SALES RATE MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING CONFIGURATION NO. 2

The following are the instructions or descriptions of the family housing liquefied petroleum gas sales rate computations main worksheet screen under the family housing configuration no. 2.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* Enter the family housing liquefied petroleum gas total purchased quantity, in gallons (Gal) or pounds (Lb), for the last 12 months.

2. Percent Losses: *Data Input Box.* Enter the percentage that represents the family housing liquefied petroleum gas system transmission losses.

3. Losses: Indicates the gallons (Gal) or pounds (Lb) quantity from the family housing liquefied petroleum gas total consumption that is considered as transmission losses.

4. Total Adjusted Consumption: Indicates the family housing liquefied petroleum gas total consumption in gallons (Gal) or pounds (Lb) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* Enter the family

housing liquefied petroleum gas total purchased cost in dollars (\$) for the last 12 months.

2. Distribution/Storage System Operation Cost:

Data Input Box. Enter the family housing liquefied petroleum gas total operation cost in dollars (\$), related to the liquefied petroleum gas distribution/storage system, for the last 12 months.

3. Total Cost of Operation:

Indicates the family housing liquefied petroleum gas total cost of operation in dollars (\$).

4. Unit Cost of Operation:

Indicates the family housing liquefied petroleum gas unit cost of operation in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

III. Cost of Normal Maintenance

1. Normal Maintenance Cost:

Data Input Box. Enter the installations owned family housing liquefied petroleum gas system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Reimbursed Maintenance Cost:

Data Input Box. Enter the family housing liquefied petroleum gas system total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. Total Cost of Maintenance:

Indicates the family housing liquefied petroleum gas total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. Unit Cost of Normal Maintenance:

Indicates the family housing liquefied petroleum gas unit cost of normal maintenance in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

IV. Rates Summary

1. Unit Cost of Operation:

Indicates the family housing liquefied petroleum gas rate unit cost of operation component in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

2. Unit Cost of Normal Maintenance: Indicates the family housing liquefied petroleum gas rate unit cost of normal maintenance component in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

3. RATE H UNIT CHARGE: Indicates the family housing liquefied petroleum gas Rate H unit charge in dollars (\$) per gallon (Gal) or dollars (\$) per pound (Lb).

Family Housing Fuel Oil No. 2 Sales Rate

TO COMPUTE THE FAMILY HOUSING FUEL OIL NO. 2 SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 2

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **2** for **fuel oil number 2**. Notice that the cell pointer is inside the "1. Purchased Quantity (Bills):" data input box.
5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵** **Enter**]. To access the remainder of the worksheet area, press [**PgDn**].

FAMILY HOUSING FUEL OIL NO. 2 SALES RATE MAIN WORKSHEET
SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING
CONFIGURATION NO. 2

The following are the instructions or descriptions of the family housing fuel oil number 2 sales rate computations main worksheet screen under the family housing configuration no. 2.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* Enter the family housing fuel oil number 2 total purchased quantity in gallons (Gal) for the last 12 months.

2. Percent Losses: *Data Input Box.* Enter the percentage that represents the family housing fuel oil number 2 system losses.

3. Losses: Indicates the gallons (Gal) quantity from the family housing fuel oil number 2 total consumption that is considered as losses.

4. Total Adjusted Consumption: Indicates the family housing fuel oil number 2 total consumption in gallons (Gal) adjusted for losses.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* Enter the family housing fuel oil number 2 total purchased cost in dollars (\$) for the last 12 months.

2. Distribution/Storage System Operation Cost: *Data Input Box.* Enter the family housing fuel oil number 2 total operation cost in dollars (\$), related to the family housing fuel oil number 2 distribution/storage system, for the last 12 months.

3. Total Cost of Operation: Indicates the family housing fuel oil number 2 total cost of operation in dollars (\$).

4. Unit Cost of Operation: Indicates the family housing fuel oil number 2 unit cost of operation in dollars (\$) per gallon (Gal).

III. Cost of Normal Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned family housing fuel oil number 2 system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Reimbursed Maintenance Cost: *Data Input Box.* Enter the family housing fuel oil number 2 system total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. Total Cost of Maintenance: Indicates the family housing fuel oil number 2 total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. Unit Cost of Normal Maintenance: Indicates the family housing fuel oil number 2 unit cost of normal maintenance in dollars (\$) per gallon (Gal).

IV. Rates Summary

1. Unit Cost of Operation: Indicates the family housing fuel oil number 2 rate unit cost of operation component in dollars (\$) per gallon (Gal).

2. Unit Cost of Normal Maintenance: Indicates the family housing fuel oil number 2 rate unit cost of normal maintenance component in dollars (\$) per gallon (Gal).

3. RATE H UNIT CHARGE: Indicates the family housing fuel oil number 2 Rate H unit charge in dollars (\$) per gallon (Gal).

Family Housing Steam Sales Rate

TO COMPUTE THE FAMILY HOUSING STEAM SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 2

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **T** for **sTeam**. Notice that at the top right side of the worksheet screen there is a unit label button and the cell pointer is inside the
“1. Purchased Quantity (Bills):” data input box.
5. The default unit label is kilopound (KLb). If you want to change the unit labels to one million British thermal units (MBTU), navigate the cell pointer to the unit label button and press [**↵ Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. If you select the unit label button again, notice that the unit labels change back to kilopound (KLb). Every time that you select this button, the unit labels cycle. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**↵ Enter**] the cell pointer jumps to the
“1. Purchased Quantity (Bills):” data input box.
6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵ Enter**]. To access the remainder of the worksheet area, press [**PgDn**].

FAMILY HOUSING STEAM SALES RATE MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING CONFIGURATION NO. 2

The following are the instructions or descriptions of the family housing steam sales rate computations main worksheet screen under the family housing configuration no. 2.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box.* Enter the family housing steam total purchased quantity, in kilopound (KLb) or one million British thermal units (MBTU), for the last 12 months.

2. Percent Losses: *Data Input Box.* Enter the percentage that represents the family housing steam system transmission losses.

3. Losses: Indicates the kilopound (KLb) or one million British thermal units (MBTU) quantity from the family housing steam total consumption that is considered as transmission losses.

4. Total Adjusted Consumption: Indicates the family housing steam total consumption in kilopound (KLb) or one million British thermal units (MBTU) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box.* Enter the family housing steam total purchased cost in dollars (\$) for the last 12 months.

2. Distribution System Operation Cost: *Data Input Box.* Enter the family housing steam total operation cost in dollars (\$), related to the family housing steam distribution system, for the last 12 months.

3. Other Operation Cost: *Data Input Box.* Enter any other operation cost in dollars (\$) related to the operation of the family housing steam system.

4. Total Cost of Operation: Indicates the family housing steam total cost of operation in dollars (\$).

5. Unit Cost of Operation: Indicates the family housing steam unit cost of operation in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

III. Cost of Normal Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned family housing steam system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Reimbursed Maintenance Cost: *Data Input Box.* Enter the family housing steam system total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. Total Cost of Maintenance: Indicates the family housing steam total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. Unit Cost of Normal Maintenance: Indicates the family housing steam unit cost of normal maintenance in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

IV. Rates Summary

1. Unit Cost of Operation: Indicates the family housing steam rate unit cost of operation component in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

2. Unit Cost of Normal Maintenance: Indicates the family housing steam rate unit cost of normal maintenance component in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

3. RATE H UNIT CHARGE: Indicates the family housing steam Rate H unit charge in dollars (\$) per kilopound (KLb) or dollars (\$) per one million British thermal units (MBTU).

Family Housing Hot Water Sales Rate

TO COMPUTE THE FAMILY HOUSING HOT WATER SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 2

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.

3. Press **F** for **Family Housing**.
4. Press **H** for **Hot Water**. Notice that the cell pointer is inside the "1. Purchased Quantity (Bills):" data input box.
5. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**Enter**]. To access the remainder of the worksheet area, press [**PgDn**].

FAMILY HOUSING HOT WATER SALES RATE MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING CONFIGURATION NO. 2

The following are the instructions or descriptions of the family housing hot water sales rate computations main worksheet screen under the family housing configuration no. 2.

I. Consumption

1. Purchased Quantity (Bills): *Data Input Box*. Enter the family housing hot water total purchased quantity, in one million British thermal units (MBTU), for the last 12 months.

2. Percent Losses: *Data Input Box*. Enter the percentage that represents the family housing hot water system transmission losses.

3. Losses: Indicates the one million British thermal units (MBTU) quantity from the family housing hot water total consumption that is considered as transmission losses.

4. Total Adjusted Consumption: Indicates the family housing hot water total consumption in one million British thermal units (MBTU) adjusted for losses in transmission.

II. Cost of Operation

1. Purchase Cost (Bill): *Data Input Box*. Enter the family housing hot water total purchased cost in dollars (\$) for the last 12 months.

2. Distribution System Operation Cost: *Data Input Box*. Enter the family housing hot water total operation cost in dollars (\$), related to the family housing hot water distribution system, for the last 12 months.

3. Other Operation Cost: *Data Input Box.* Enter any other operation cost in dollars (\$) related to the operation of the family housing hot water system.

4. Total Cost of Operation: Indicates the family housing hot water total cost of operation in dollars (\$).

5. Unit Cost of Operation: Indicates the family housing hot water unit cost of operation in dollars (\$) per one million British thermal units (MBTU).

III. Cost of Normal Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned family housing hot water system total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Reimbursed Maintenance Cost: *Data Input Box.* Enter the family housing hot water system total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. Total Cost of Maintenance: Indicates the family housing hot water total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. Unit Cost of Normal Maintenance: Indicates the family housing hot water unit cost of normal maintenance in dollars (\$) per one million British thermal units (MBTU).

IV. Rates Summary

1. Unit Cost of Operation: Indicates the family housing hot water rate unit cost of operation component in dollars (\$) per one million British thermal units (MBTU).

2. Unit Cost of Normal Maintenance: Indicates the family housing hot water rate unit cost of normal maintenance component in dollars (\$) per one million British thermal units (MBTU).

3. RATE H UNIT CHARGE: Indicates the family housing hot water Rate H unit charge in dollars (\$) per one million British thermal units (MBTU).

Family Housing Space Cooling Sales Rate**TO COMPUTE THE FAMILY HOUSING SPACE COOLING SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 2**

1. Press [**F10**] to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.
4. Press **P** for **sPace Cooling**. Notice that at the top right side of the worksheet screen there is a unit label button and the cell pointer is inside the "I. Total Space Area/Volume Served:" data input box.
5. The default unit label is based on space area, square foot (SqFt). If you want the unit label to be based on space volume, one thousand cubic feet (MCF), navigate the cell pointer to the unit label button and press [**↵ Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. If you select the unit label button again, notice that the unit labels change back to square foot (SqFt). Every time that you select this button, the unit labels cycle. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**↵ Enter**] the cell pointer jumps to the "I. Total Space Area/Volume Served:" data input box.
6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵ Enter**]. To access the remainder of the worksheet area, press [**PgDn**].

**FAMILY HOUSING SPACE COOLING SALES RATE MAIN WORKSHEET
SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING
CONFIGURATION NO. 2**

The following are the instructions or descriptions of the family housing space cooling sales rate computations main worksheet screen the family housing configuration no. 2.

I. Total Space Area/Volume Served: *Data Input Box:* Enter the family housing total space area in square foot (SqFt) or total space volume in one thousand cubic feet (MCF), of all family housing units that were cooled for the

last 12 months.

II. Cost of Operation

1. Cost of Labor/Supervision: *Data Input Box.* Enter the family housing space cooling total cost of labor/supervision, in dollars (\$), related to the operation of all family housing space cooling systems for the last 12 months.

2. Cost of Equipment Rental: *Data Input Box.* Enter the family housing space cooling total cost of equipment rental, in dollars (\$), related to the operation of all family housing space cooling systems for the last 12 months.

3. Water for Space Cooling

a. Water Consumed: *Data Input Box.* Enter the total water consumption quantity in kilogallons (KGal) used for family housing space cooling for the last 12 months.

b. Water Rate: Indicates the current family housing filtered water sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing filtered water sales rates main worksheet computations.

c. Cost of Water: Indicates the total cost of water, in dollars (\$), used for family housing space cooling.

4. Water/Steam Pumping

a. Electric Power Consumed: *Data Input Box.* Enter the total electric power consumption quantity in kilowatt-hours (KWh) used by the family housing space cooling water/steam pumps for the last 12 months. If your installation does not meter the electric power consumed by the pumps, you may estimate the consumption using the following formula:

$$\text{KWh} = \frac{\text{Pumping Rate (GPM)} \times \text{Average Pumping Head (Ft)} \times \text{Annual Hours of Use (Hrs)} \times 0.746}{3960 \times 0.65}$$

b. Electric Power Rate: Indicates the current family housing electric power sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing electric power sales rates main worksheet computations.

c. Cost of Water/Steam Pumping: Indicates the total cost of the family housing electric power, in dollars (\$), used for pumping water/steam related to family housing space cooling.

5. Electric Power for Space Cooling

a. Electric Power Consumed: *Data Input Box.* Enter the total electric power consumption quantity in kilowatt-hours (KWh) used for family housing space cooling for the last 12 months. Exclude the electric power consumed by the water/steam pumps.

b. Electric Power Rate: Indicates the current family housing electric power sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing electric power sales rates main worksheet computations.

c. Cost of Electric Power: Indicates the total cost of the family housing electric power, in dollars (\$), used for family housing space cooling.

6. Natural Gas for Space Cooling

a. Natural Gas Consumed: *Data Input Box.* Enter the total natural gas consumption quantity in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth), as applicable, used for family housing space cooling for the last 12 months.

b. Natural Gas Rate: Indicates the current family housing firm natural gas sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing firm natural gas sales rates main worksheet computations.

c. Cost of Natural Gas: Indicates the total cost of the family housing natural gas, in dollars (\$), used for family housing space cooling.

7. LPG for Space Cooling

a. LPG Consumed: *Data Input Box.* Enter the total liquefied petroleum gas (LPG) consumption quantity in gallons (Gal) or pounds (Lb) used for family housing space cooling for the last 12 months.

b. LPG Rate: Indicates the current family housing liquefied petroleum gas sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing liquefied petroleum gas sales rates main worksheet computations.

c. Cost of LPG: Indicates the total cost of the family housing liquefied petroleum gas, in dollars (\$), used for family housing space cooling.

8. Steam for Space Cooling

a. Steam Consumed: *Data Input Box.* Enter the total steam consumption quantity in kilopounds (KLb) or one million British thermal units (MBTU) used for family housing space cooling for the last 12 months.

b. Steam Rate: Indicates the current family housing steam sales Rate A. UTILRATE for DOS automatically picked up this rate from the current family housing steam sales rates main worksheet computations.

c. Cost of Steam: Indicates the total cost of the family housing steam, in dollars (\$), used for family housing space cooling.

9. Other Operation Cost: *Data Input Box.* Enter any other operation cost in dollars (\$) related to the operation of the family housing space cooling systems.

10. Total Cost of Operation: Indicates the family housing space cooling total cost of operation in dollars (\$).

11. Unit Cost of Operation: Indicates the family housing space cooling unit cost of operation in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

III. Cost of Normal Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned family housing space cooling systems total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Reimbursed Maintenance Cost: *Data Input Box.* Enter the family housing space cooling systems total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. Total Cost of Maintenance: Indicates the family housing space cooling total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. Unit Cost of Normal Maintenance: Indicates the family housing space cooling unit cost of normal maintenance in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

IV. Rates Summary

1. Unit Cost of Operation: Indicates the family housing space cooling rate seasonal unit cost of operation component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

2. Unit Cost of Normal Maintenance: Indicates the family housing space cooling rates seasonal unit cost of normal maintenance component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

3. Rate H Seasonal Unit Charge: Indicates the family housing space cooling Rate H seasonal unit charge in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF). Usually, the cooling season varies on a yearly basis. UTILRATE for DOS assumes that the cooling season last 6 months.

4. RATE H MONTHLY UNIT CHARGE: Indicates the family housing space cooling Rate H monthly unit charge (= Rate H Seasonal Unit Charge divided by 6) in dollars (\$) per square foot (SqFt) per month or dollars (\$) per one thousand cubic feet (MCF) per month.

Family Housing Space Heating Sales Rate

TO COMPUTE THE FAMILY HOUSING SPACE HEATING SALES RATE
COMPUTATION UNDER FAMILY HOUSING CONFIGURATION NO. 2

1. Press **[F10]** to invoke the UTILRATE for DOS menu system.
2. Press **C** for **Compute**.
3. Press **F** for **Family Housing**.

4. Press **A** for **spAce Heating**. Notice that at the top right side of the worksheet screen there is a unit label button and the cell pointer is inside the "I. Total Space Area/Volume Served:" data input box.
5. The default unit label is based on space area, square foot (SqFt). If you want the unit label to be based on space volume, one thousand cubic feet (MCF), navigate the cell pointer to the unit label button and press [**↵ Enter**], or if you have a mouse, move the mouse cursor to the unit label button and click the mouse left button. If you select the unit label button again, notice that the unit labels change back to square foot (SqFt). Every time that you select this button, the unit labels cycle. The easiest way of selecting this button is with a mouse. Selecting this button with the cell pointer is tedious since every time that you select the button by moving the cell pointer and pressing [**↵ Enter**] the cell pointer jumps to the "I. Total Space Area/Volume Served:" data input box.
6. Navigate the cell pointer with the arrow keys and place it inside the data input box, or if you have a mouse, click inside the box, of the data input box where you want to enter the information. Type the information and press [**↵ Enter**]. To access the remainder of the worksheet area, press [**⏏ PgDn**].

FAMILY HOUSING SPACE HEATING SALES RATE MAIN WORKSHEET SCREEN INSTRUCTIONS/DESCRIPTION UNDER FAMILY HOUSING CONFIGURATION NO. 2

The following are the instructions or descriptions of the family housing space heating sales rate computations main worksheet screen under the family housing configuration no. 2.

I. Total Space Area/Volume Served: *Data Input Box:* Enter the family housing total space area in square foot (SqFt) or total space volume in one thousand cubic feet (MCF), of all family housing units that were heated for the last 12 months.

II. Cost of Operation

1. Cost of Labor/Supervision: *Data Input Box.* Enter the family housing space heating total cost of labor/supervision, in dollars (\$), related to the operation of all family housing space heating systems for the last 12 months.

2. Cost of Equipment Rental: *Data Input Box.* Enter the family housing space heating total cost of equipment rental, in dollars (\$), related

to the operation of all family housing space heating systems for the last 12 months.

3. Water for Space Heating

a. Water Consumed: *Data Input Box.* Enter the total water consumption quantity in kilogallons (KGal) used for family housing space heating for the last 12 months.

b. Water Rate: Indicates the current family housing filtered water sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing filtered water sales rates main worksheet computations.

c. Cost of Water: Indicates the total cost of water, in dollars (\$), used for family housing space heating.

4. Water/Steam Pumping

a. Electric Power Consumed: *Data Input Box.* Enter the total electric power consumption quantity in kilowatt-hours (KWh) used by the family housing space heating water/steam pumps for the last 12 months. If your installation does not meter the electric power consumed by the pumps, you may estimate the consumption using the following formula:

$$\text{KWh} = \frac{\text{Pumping Rate (GPM)} \times \text{Average Pumping Head (Ft)} \times \text{Annual Hours of Use (Hrs)} \times 0.746}{3960 \times 0.65}$$

b. Electric Power Rate: Indicates the current family housing electric power sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing electric power sales rates main worksheet computations.

c. Cost of Water/Steam Pumping: Indicates the total cost of the family housing electric power, in dollars (\$), used for pumping water/steam related to family housing space heating.

5. Electric Power for Space Heating

a. Electric Power Consumed: *Data Input Box.* Enter the total electric power consumption quantity in kilowatt-hours (KWh) used for family housing space heating for the last 12 months. Exclude the electric power consumed by the water/steam pumps.

b. Electric Power Rate: Indicates the current family housing electric power sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing electric power sales rates main worksheet computations.

c. Cost of Electric Power: Indicates the total cost of the family housing electric power, in dollars (\$), used for family housing space heating.

6. Natural Gas for Space Heating

a. Natural Gas Consumed: *Data Input Box.* Enter the total natural gas consumption quantity in cubic feet (CF), one hundred cubic feet (CCF), one thousand cubic feet (MCF), one million cubic feet (MMCF), British thermal units (BTU), one thousand British thermal units (MBTU), one million British thermal units (MMBTU), therms (Th), or decatherms (Dth), as applicable, used for family housing space heating for the last 12 months.

b. Natural Gas Rate: Indicates the current family housing firm natural gas sales Rate H. UTILRATE for DOS automatically picked up this rate from the current applicable family housing natural gas sales rates main worksheet computations.

c. Cost of Natural Gas: Indicates the total cost of the family housing natural gas, in dollars (\$), used for family housing space heating.

7. LPG for Space Heating

a. LPG Consumed: *Data Input Box.* Enter the total liquefied petroleum gas (LPG) consumption quantity in gallons (Gal) or pounds (Lb) used for family housing space heating for the last 12 months.

b. LPG Rate: Indicates the current family housing liquefied petroleum gas sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing liquefied petroleum gas sales rate main worksheet computations.

c. Cost of LPG: Indicates the total cost of the family housing liquefied petroleum gas, in dollars (\$), used for family housing space heating.

8. Fuel Oil for Space Heating

a. Fuel Oil Consumed: *Data Input Box.* Enter the total fuel oil consumption quantity in gallons (Gal) used for family housing space heating for the last 12 months.

b. Fuel Oil Rate: Indicates the current family housing fuel oil number 2 sales Rate H. UTILRATE for DOS automatically picked up this rate from the current applicable family housing fuel oil sales rates main worksheet computations.

c. Cost of Fuel Oil: Indicates the total cost of the family housing fuel oil, in dollars (\$), used for family housing space heating.

9. Steam for Space Heating

a. Steam Consumed: *Data Input Box.* Enter the total steam consumption quantity in kilopounds (KLb) or one million British thermal units (MBTU) used for family housing space heating for the last 12 months.

b. Steam Rate: Indicates the current family housing steam sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing steam sales rates main worksheet computations.

c. Cost of Steam: Indicates the total cost of the family housing steam, in dollars (\$), used for family housing space heating.

10. Hot water for Space Heating

a. Hot water Consumed: *Data Input Box.* Enter the total hot water consumption quantity in one million British thermal units (MBTU) used for family housing space heating for the last 12 months.

b. Hot water Rate: Indicates the current family housing hot water sales Rate H. UTILRATE for DOS automatically picked up this rate from the current family housing hot water sales rates main worksheet computations.

c. Cost of Hot water: Indicates the total cost of the family housing hot water, in dollars (\$), used for family housing space heating.

11. Cost of Consumed Coal: *Data Input Box.* Enter the total cost of the coal, in dollars (\$), consumed and used for family housing space heating.

12. Cost of Consumed Wood Pellets: *Data Input Box.* Enter the total cost of the wood pellets, in dollars (\$), consumed and used for family housing space heating.

13. Other Operation Cost: *Data Input Box.* Enter any other operation cost in dollars (\$) related to the operation of the family housing space heating systems.

14. Total Cost of Operation: Indicates the family housing space heating total cost of operation in dollars (\$).

15. Unit Cost of Operation: Indicates the family housing space heating unit cost of operation in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

III. Cost of Normal Maintenance

1. Normal Maintenance Cost: *Data Input Box.* Enter the installations owned family housing space heating systems total normal (recurrent) maintenance cost in dollars (\$) for the last 12 months.

2. Reimbursed Maintenance Cost: *Data Input Box.* Enter the family housing space heating systems total maintenance cost in dollars (\$) that are reimbursed to the installation's Directorate of Public Works through other than a contract for sale of utilities services or a memorandum of understanding for sale of utilities services (as specified by the AR 420-41).

3. Total Cost of Maintenance: Indicates the family housing space heating total cost of normal maintenance in dollars (\$) adjusted for maintenance reimbursables.

4. Unit Cost of Normal Maintenance: Indicates the family housing space heating unit cost of normal maintenance in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

IV. Rates Summary

1. Unit Cost of Operation: Indicates the family housing space heating rate seasonal unit cost of operation component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

2. Unit Cost of Normal Maintenance: Indicates the family housing space heating rate seasonal unit cost of normal maintenance component in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF).

3. Rate H Seasonal Unit Charge: Indicates the family housing space heating Rate H seasonal unit charge in dollars (\$) per square foot (SqFt) or dollars (\$) per one thousand cubic feet (MCF). Usually, the heating season varies on a yearly basis. UTILRATE for DOS assumes that the heating season last 6 months.

4. RATE H MONTHLY UNIT CHARGE: Indicates the family housing space heating Rate H monthly unit charge (= Rate H Seasonal Unit Charge divided by 6) in dollars (\$) per square foot (SqFt) per month or dollars (\$) per one thousand cubic feet (MCF) per month.

Explanatory Document

We recommend that you briefly document your rationale for the percentages in losses in transmission or infiltration, abnormal maintenance projects, utility system acquisition cost changes due to system expansion and/or replacement, changes and interpretation of local prevailing rates (nearest utility suppliers rates schedules), and any other issues that will help to understand the data used for the computation of the utilities sales rates. You can do this, by generating the explanatory document with any word processor and attaching the generated document to the installation's official utilities sales tariff book. Please organize your explanatory notes following the same order of the UTILRATE for DOS generated computations printout order.

Assembling the Official Utilities Sales Tariff Book Binder

To assemble the installation's official tariff book binder, you need to gather the utilities sales tariff book printout generated by UTILRATE for DOS, all nearest utility suppliers tariff books, and the explanatory document generated with your word processor. We recommend that you get a 3-ring binder big enough to fit the before mentioned documentation.

Insert the documentation in the 3-ring binder in the following order:

1. First, insert the utilities sales tariff book printout generated by UTILRATE for DOS.
2. Second, insert all nearest utility suppliers tariff books following the same order of the UTILRATE for DOS generated computations printout order.

3. and Last, insert the explanatory document generated with your word processor.



Boila! you got yourself a UTILITIES SALES TARIFF BOOK BINDER



BE HAPPY....!

Appendix A - Technical Assistance Point of Contact

If you have problems, concerns, or need help with UTILRATE for DOS, you may contact Mr. Rafael Zayas, Assistant Deputy Army Power Procurement Officer, by

TELEPHONE: DSN 328-7366
COMM (703)428-7366

FAX: DSN 328-7566
COMM (703)428-7566

INTERNET ADDRESS: rafael.zayas@cpw01.usace.army.mil

WRITE: Director
U.S. Army Center for Public Works
ATTN: CECPW-C (Mr. Rafael Zayas)
7701 Telegraph Road
Alexandria, VA 22315-3862

Please be ready to provide the following information when contacting us for technical assistance:

- UTILRATE for DOS version number.
- Detailed description of problem(s) and the circumstances surrounding it(them).
- Computer description and configuration.
- Printer description and configuration.
- MS-DOS version.
- Microsoft Windows version, if applicable.
- Description of AUTOEXEC.BAT file.
- Description of CONFIG.SYS file.

Appendix B - Army Regulation (AR) 420-41 and Related Memorandums

- ***Army Regulation (AR) 420-41*, 15 September 1990, Facilities Engineering - Acquisition and Sale of Utilities Services, as amended by Interim Change No. I01, 30 September 1992.**
- ***Memorandum*, CEHSC-C (presently CECPW-C), 7 June 1993, subject: Technical Approval Authority of Utility Acquisition and Sales Contracts.**
- ***Memorandum*, CECPW-C, 8 October 1993, subject: Utilities Contract Management.**

Headquarters
Department of the Army
Washington, DC
30 September 1992

Immediate Action INTERIM CHANGE

AR 420-41
Interim Change
No. I01
Expires 30 September 1994

Facilities Engineering

Acquisition and Sale of Utilities Services

Justification. This interim change incorporates the transfer of FORSCOM and TRADOC MACOM engineer Army power procurement functions to the Director of Army Power Procurement, U.S. Army Engineering and Housing Support Center, as per existing memorandums of agreement among the above parties. It implements 10 U.S.C. 2805(c)(1) by amending provision for the MACOM commander's delegation of authority for the approval of utilities acquisition connection cost. A recent change to 10 U.S.C. 2805(c)(1) increased the limitation for the use of operation and maintenance, Army (OMA) funds for the payment of utilities connection facilities (military construction) from \$200,000 to \$300,000. In addition, the interim change rectifies the citations made to the title "utilities services/ sales officer".

Expiration. This interim change expires 2 years from date of publication. It will be destroyed at that time unless sooner rescinded or superseded by a permanent change or revision.

1. AR 420-41, 15 September 1990, is changed as follows:

Beginning of interim change: The proponent of this regulation is the Chief of Engineers. The Chief of Engineers has the authority to approve exceptions to this regulation which are consistent with controlling law and regulation. The Chief of Engineers has delegated this approval authority per this publication to the Deputy Army Power Procurement Officer (DAPPO). The approval authority will coordinate all questions regarding the scope of authority to approve exceptions with legal counsel.

All Pages. Citations made to the titles "utilities sales/service officer", "utility service/sales officer, utilities service/sales officer", "utilities service or sale officer", "utilities sales officer", and "utility services/sales officer" are changed to read "utilities services/sales officer".

Page 3. Paragraph I-4b(6) is superseded as follows:

(6) Perform utilities services acquisition and sales oversight functions as described in paragraph c, below, for the following organizations:

- (a) U.S. Forces Command.
- (b) U.S. Army Training and Doctrine Command.
- (c) U.S. Army Health Services Command.
- (d) U.S. Army Information Systems Command.
- (e) U.S. Army Intelligence and Security Command.
- (f) U.S. Military Academy.
- (g) U.S. Military Traffic Management Command.
- (h) U.S. Army Strategic Defense Command.
- (i) U.S. Defense Logistics Agency.

Page 3. Paragraph I-4b(7) is added as follows:

(7) Approve exceptions to this regulation consistent with controlling law and regulation.

Page 4. Paragraph 2-3c is superseded as follows:

c. The MACOM commander may delegate to the installation commander authority to technically approve proposed utilities acquisitions with an estimated annual cost of not more than \$250,000, or a connection cost of not more than \$300,000.

- 2. Post these changes per DA Pam 310-13.
- 3. File this interim change in front of the publication.

(DAEN)

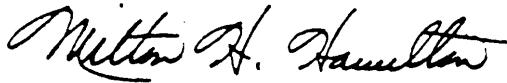
30 September 1992

I01, AR 420-41

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

A handwritten signature in black ink, reading "Milton H. Hamilton". The signature is written in a cursive style with a large, stylized 'M' and 'H'.

MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army

DISTRIBUTION: Distribution of this Publication is made in accordance with the requirements on DA Form 12-09-E, block number 3481, intended for command level C, D, and E for Active Army, none for Army National Guard, and D and E for U.S. Army Reserve.

Facilities Engineering

Acquisition and Sale of Utilities Services

**Headquarters
Department of the Army
Washington, DC
15 September 1990**

Unclassified

SUMMARY of CHANGE

AR 420-41

Acquisition and Sale of Utilities Services

This revision--

- o Delegates certain acquisition approval authority to MACOMs.
- o Restructures format by placing details of Army procedures and administration in appendixes.
- o Lists acceptable methods for acquisition of utilities services.
- o Replaces the term "Facilities Engineer" with the current term "Director of Engineering and Housing."
- o Adds references to Army regulations for guidance in classification of funds for connection charges.
- o Changes title of regulation.

Effective 12 October 1990

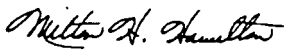
Facilities Engineering

Acquisition and Sale of Utilities Services

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:



MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army

History. This UPDATE printing publishes a revision of this publication. Because this publication has been extensively revised, the changed portions have not been highlighted.

Summary. This regulation establishes policy, responsibilities, and procedures for the acquisition and sale of utility services. The sections pertaining to acquisition implement DOD Directive 5100.32. The sections pertaining to sale of utilities services implement 10 USC 2481.

Applicability. This regulation applies to the

Active Army and the U.S. Army Reserve, including inactive installations. It does not apply to the Army National Guard, or the Civil Works Functions of the U.S. Army Corps of Engineers. It applies to personnel engaged in the acquisition of utility services (electricity, gas, water, sewage, and steam). It also applies to personnel engaged in the sale of utilities and related services (electric power, steam, heat, hot water, water, compressed air, gas (natural, manufactured, liquefied petroleum, or mixed), fuel oil, ice, air conditioning, mechanical refrigeration, sewage, garbage, and refuse disposal).

Proponent and exception authority.
Not applicable

Army management control process. This regulation is subject to the requirements of AR 11-2. It contains internal control provisions but does not contain checklists for conducting internal reviews. These checklists are published in DA Circular 11-87-4.

Supplementation. Supplementation of this regulation and the establishment of command and local forms are prohibited unless prior approval is obtained from the Army Power Procurement Office, ATTN: CEHSC-C, U.S.

Army Engineering and Housing Support Center, Fort Belvoir, VA 22060-5516.

Interim changes. Interim changes to this regulation are not official unless they are authenticated by the Administrative Assistant to the Secretary of the Army. Users will destroy interim changes on their expiration date unless sooner superseded or rescinded.

Suggested Improvements. The proponent of this regulation is the Office of the Chief of Engineers. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Department of the Army, Director, U.S. Army Engineering and Housing Support Center, ATTN: CEHSC-C, Fort Belvoir, VA 22060-5516.

Distribution. Distribution of this publication is made in accordance with the requirements on DA Form 12-09-E, block number 3481, intended for command level C, D, and E for Active Army; none for Army National Guard; and D and E for United States Army Reserve.

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Glossary

*This regulation supersedes AR 420-41, 1 October 1982.

RESERVED

Chapter 1 General

1-1. Purpose

This regulation prescribes Army unique procedures and responsibilities regarding acquisition of utilities services pursuant to the Armed Services Procurement Regulation, Supplement Number 5 (ASPRS No. 5). It also prescribes policies, procedures, and responsibilities for the sale of utilities and related services. Its purpose is to acquire utility services at the lowest overall cost commensurate with requirements.

1-2. References

Required and related publications, and prescribed and referenced forms are listed in appendix A.

1-3. Explanation of abbreviations and terms

Abbreviations and special terms used in this regulation are explained in the glossary.

1-4. Responsibilities

a. The Chief of Engineers (COE). The Chief of Engineers will prescribe unique policies and procedures relating to the acquisition of utility services and sale of utilities and related services. He or she is designated the Army Power Procurement Officer (APPO) through redelegation by the Assistant Secretary of the Army (Research, Development, and Acquisition) with authority to approve the acquisition of utilities services. The COE may redelegate this authority as deemed necessary for efficient acquisition. He or she may also delegate authority for the sale of utility services by Army activities.

b. The Deputy Army Power Procurement Officer (DAPPO). The Deputy Army Power Procurement Officer (DAPPO) is appointed by the APPO. The DAPPO is the Chief, Army Power Procurement Office, within the U.S. Army Engineering and Housing Support Center. The DAPPO will—

(1) Assist the APPO in the administration of transactions relating to the approval of purchase and sale of utilities services.

(2) Serve as the Army Representative on the Federal Acquisition Regulation (FAR) Joint Committee on Utilities, as an Army Representative on the Defense Utilities Energy Coordinating Council (DUECC) Acquisition Committee, and provide oversight of the Army's DUECC regional and area boards.

(3) Provide engineering and technical assistance related to acquisition and sale of utilities services.

(4) Ensure compliance with unique procedures of the FAR system pertaining to the acquisition of utilities services.

(5) Approve acquisition of utilities services extending beyond a current fiscal year, but not exceeding 10 years.

(6) Perform utilities services acquisition and sales oversight functions as described in paragraph c, below, for the following MACOMs:

- (a) U.S. Army Health Services Command.
- (b) U.S. Army Information Systems Command.
- (c) U.S. Army Intelligence and Security Command.
- (d) U.S. Army Military Academy.
- (e) Military Traffic Management Command.
- (f) U.S. Army Strategic Defense Command.
- (g) U.S. Defense Logistics Agency.

c. Commanders of Major Army commands (MACOMs).

(1) The MACOM commanders will provide operational oversight of the preparation, technical rates selection, negotiation, and award of contracts for the acquisition and sale of utility services. He or she will designate the MACOM Engineer to act on his or her behalf for oversight and redelegation as required to ensure compliance with this regulation.

(2) For those MACOMs commanded by a four-star Army General, the MACOM engineer will act as Assistant Deputy Army Power Procurement Officer (ADAPPO) and will—

(a) Assist the DAPPO in the administration of transaction relating to the approval of acquisitions and sales of utilities services.

(b) Ensure compliance with unique features of the FAR system pertaining to the acquisition of utilities services for CONUS installations.

(c) Ensure compliance with the status of forces agreement of the applicable host nation for installations/communities outside CONUS.

(d) Approve acquisition of utilities extending beyond a current fiscal year, but not exceeding 10 years.

(3) The MACOM engineer will appoint an Army Power Procurement Officer Representative (APPOR) with an engineering background and experience in utility rate analysis and negotiations with utility companies to assist the contracting officer in the oversight of all transactions related to the acquisition of utilities services. The APPOR will also assist in the oversight of sales of utilities services.

(4) The MACOM APPOR will—

(a) Approve the acquisition of utilities services within limits specified in paragraph 2-3b.

(b) Review and approve rates or rate computations at least yearly for the sale of all utilities services available at installations within the command.

(c) Review proposed acquisitions of utilities services that require approval by the DAPPO or ADAPPO. For DAPPO approval, forward these to Department of the Army, U.S. Army Engineering and Housing Support Center, ATTN: CEHSC-C, Fort Belvoir, VA 22060-5516.

(d) Review, annually, existing utilities acquisition contract rates, survey load characteristics, and make or recommend adjustments of rates and charges.

(e) Provide assistance to installations or communities in solicitation, negotiation, preparation, revision, and modification of utilities contracts.

(f) Maintain liaison with State, municipal or applicable regulatory bodies responsible for regulating utilities and maintain familiarity with prescribed policies, procedures, and rates.

(g) Review utilities rates to determine if primary facilities should be owned by the Government or the utility supplier.

(h) Administer the sale of utilities and related services.

(i) Visit installations or communities to ensure that the acquisition and sale of utilities services are in accordance with policy and regulations.

(5) Installation or community commanders are responsible for oversight of the acquisition and sale of utilities services. They will—

(a) Ensure coordination between the contracting officer and the Director of Engineering and Housing in all phases of the acquisition of utilities services.

(b) Ensure the policies of this regulation are followed in the sale of utilities and related service.

(6) The Director of Engineering and Housing (DEH) will—

(a) Coordinate the acquisition of utilities services and provide technical support to the contracting officer.

(b) Designate a professional engineer as the utilities sales/service officer.

(7) The utilities services/sales officer will—

(a) Prepare technical supporting data pertaining to the acquisition and administration of utilities services as required by this regulation and the FAR System.

(b) Participate in technical and rates negotiations and in discussion supporting the contracting officer.

(c) Plan and prepare administrative and contract data for the sale of utilities and related services, as authorized in this regulation.

(d) Execute utilities sales contracts for the resale of utilities and related services.

(8) The installation or area contracting officer will—

(a) Process actions for the acquisition of utilities services after coordination with the utilities services/sales officer.

(b) Execute solicitations and contracts for the acquisition of utilities services following validation and approval of the technical requirements by the proper technical authority.

(9) The installation Staff Judge Advocate will—

(a) Review utilities solicitations and proposed contracts and determine if they are legally sufficient.

(b) Review any supplemental agreements and change orders to utilities contracts for legal sufficiency.

(c) Review proposed sales instruments for legal sufficiency.

d. *Division and district engineers.* Division and district engineers engaged in Construction, Military Construction, Army (MCA) (AR 415-15), minor construction (AR 415-35), and maintenance and repair work (AR 420-10), for Army installations are responsible under Corps of Engineers regulations for negotiation and preparation of contracts for utilities services required during the projects. Each division engineer will appoint a professional engineer to serve as division APPOR. The installation contracting officer and the DEH utility service/sales officer responsible for future contract administration will be advised of planned negotiations of contracts by the district engineer. The installation will be advised of the status of acquisition actions and will be included in the discussion and resolution of complicated or potentially controversial issues. The installation will be allowed the option of negotiating contracts where there are no connection charges or other expenditures involving the use of military construction funds. All military construction contracts requiring resale of utilities service to a contractor will be coordinated with the installation's utilities service/sales officer.

Chapter 2 Acquisition of Utility Services

2-1. Acquisition policy

a. ASPRS No. 5 is the basic document to be followed in the acquisition of utility services. It contains policy, procedures, and contract formats.

b. Utility services will be procured at the lowest overall total cost to the Army, consistent with appropriate regard for high standards of health and sanitation, adequacy to needs, efficiency of operations, and reliability of service.

c. Installations located outside the United States, its possessions, and Puerto Rico may vary the formats and technical provisions of contracts to comply with local practice when approval is obtained from the appropriate authority. All contracts for installations located outside the United States will comply with the status of forces agreement with the applicable host nation.

d. Acquisition of utility services will be planned to promote and provide full and open competition.

e. The existence of a single franchised service territory is not justification for the acquisition of utility services on a noncompetitive basis.

f. General Services Administration (GSA) area-wide contracts will be used where applicable. However, valid contracts in existence will not be terminated solely for the purpose of converting the transaction to a GSA area-wide contract.

g. Use Operational Maintenance, Army (OMA) funds for connection of existing facilities to a supplier's distribution systems. Use MCA funds to connect new or expanded facilities to a supplier's distribution system. Contributions to the cost of expanding a supplier's production facilities or "backbone" distribution systems are construction. The installation or expansion of government owned facilities on Government-owned property is construction (see AR 415-35).

h. Acquisition plans will be prepared pursuant to Army Federal Acquisition Regulation Supplement (AFARS), subpart 1.7.

2-2. Rate increases

a. When a supplier proposes an increase in the rates to be charged, the utility service/sales officer must determine whether the proposed increase is reasonable, justified, and not discriminatory. The installation contracting officer will be advised of all related negotiations and will participate as he or she determines appropriate.

b. Contract modifications, including supplemental agreements

and change orders, covering changes of rates under published rate schedules regulated by a public regulatory body do not require approval of higher authority.

2-3. Levels of approval, Army wide

a. The DAPPO and the ADAPPO may technically approve proposed utilities acquisitions with annual cost over \$7,500,000, or connection charges over \$500,000.

b. The APPORs may technically approve proposed acquisitions with an estimated annual cost of not more than \$7,500,000, or connection cost of not more than \$500,000.

c. The MACOM commander may delegate to the installation commander authority to technically approve proposed utilities acquisitions with an estimated annual cost of not more than \$250,000, or a connection cost of not more than \$200,000.

d. The Director, U.S. Army Contracting Support Agency (SFRD-ZK), will approve all required changes or deviations from standard clauses 8 through 21, ASPRS S5-203.2, as specified in the Army FAR Supplement (AFARS) 1.403.

2-4. Preparation of solicitations and contracts

Preparation of solicitations and contracts for the acquisition of utilities services is under the direction of the contracting officer. The utilities service or sale officer provides technical support from initiation of the requirement, through negotiations, to approval of the technical provisions of the solicitation or contract. The Staff Judge Advocate provides legal review and assistance. Contracting officers execute contracts after technical concurrence by the utilities service/sales officer.

2-5. Execution of solicitations and contracts

A contracting officer will execute all solicitations and contracts for the acquisition of utilities services.

2-6. Technical assistance

The DAPPO will provide technical assistance to the MACOMs as requested. Requests for technical assistance should be initiated while projects are still in the site investigation stage.

Chapter 3 Sales of Utilities and Related Services

3-1. Sales policy

a. *General.* Sales may be made to purchasers specified in paragraph 3-2. Sales to organizations outside the installation will be limited as far as possible. No utilities services will be sold at less than the cost to the Government. Sales must meet the preconditions in b, below.

b. *Preconditions for consideration of sales.*

(1) The sale will not disrupt present or planned services to the Army.

(2) The services will not be available from local private or public suppliers. The services may be considered to be not available when revenue from the service is not enough to warrant extending service by a private or public supplier.

(3) Construction of facilities or systems by the Government required for the sale will not hinder future construction to serve a customer by a public or private utility company.

(4) Sales of utilities services are not prohibited by any contract under which the Government purchases the services; and

(5) The purchaser is within the installation or in the immediate vicinity of the installation.

c. *Utilities and related services that may be sold.*

(1) Electric power.

(2) Steam.

(3) Heat.

(4) Hot water.

(5) Water.

(6) Compressed air.

- (7) Gas (natural, manufactured, liquefied petroleum, or mixed).
- (8) Fuel oil.
- (9) Ice.
- (10) Mechanical refrigeration.
- (11) Air conditioning.
- (12) Sewage.
- (13) Garbage.
- (14) Refuse disposal.

d. Sales of utilities services. Sales of utilities services will be accomplished by written contract or memorandum of understanding, except for services to occupants of Government quarters (if charged). Such sales instruments shall be reviewed for legal sufficiency.

3-2. Purchasers of utilities services.

Sales may be made to—

- a.* Other Government agencies, Executive departments, independent establishments of the Government, or related bureaus or offices.
- b.* Lessees of industrial facilities used by lessees for private commercial purposes.
- c.* Morale, Welfare, and Recreational (MWR) activities. The sale and charges for utilities services to MWR activities will comply with the funding policy in AR 215-1.
- d.* Concessionaires through their reimbursement to the NAF organizations. When concessionaires are not metered separately, the utilities services/sales officer will compute the charges.
- e.* Concessionaires, direct sales.
- f.* Non-Federal organizations.
 - (1) Purchasers located within the installation.
 - (2) Purchasers located outside the installation.
 - (3) Military housing projects insured by the Government under title VII of the National Housing Act.
 - (4) Government employees renting government quarters.

3-3. Rates

Rates for Federal Government activities and family housing will equal the cost to the Government (including operation and maintenance costs plus transmission losses). All other customers located on an installation will be charged the total cost to the Government including transmission losses, operation and maintenance costs, capital charges, and administrative overhead. Customers located off of an installation will be charged the local prevailing rate of the closest utility company; however, the rate will not be less than the total cost to the Government including transmission losses, operation and maintenance costs, capital charges, and administrative overhead.

3-4. Approval authority

- a.* The DAPPO will coordinate approval of any sales contract involving Title VIII, National Housing Act projects, with the Office of the Secretary of the Army.
- b.* The APPOR will—
 - (1) Approve any sales contract involving purchasers located outside the installation.
 - (2) Approve any sales contract with an annual charge of over \$500,000.
 - (3) Review and approve rates and/or rate calculations for sale of utilities at least annually.
- c.* The installation DEH will authorize the sale of utilities and related services within dollar limits prescribed by the APPOR.

3-5. Accounting

The proceeds received from the sale of utilities and related services will be credited to the appropriation available for supplying such services.

3-6. Contract preparation and forms

- a.* The utilities sales officer will prepare and execute sales contracts. All sales will be by written contract except a Memorandum

of Understanding may be used for services to other Federal agencies. Services to occupants of Government quarters will be by execution of a local application form suitably prepared to cover accounting transactions.

b. Army procedures for documentation of sales are provided in detail in appendix C.

c. The forms to be used in the sales of utilities and related services are discussed in appendix C and a copy for reproduction purposes is located at the back of this regulation (see para C-2).

Appendix A References

Section I Required Publications

AR 210-10

Administration. (Cited in para B-5a)

AR 215-1

Administration of Army Morale, Welfare, and Recreation Activities and Nonappropriated Fund Instrumentality's. (Cited in para 3-2.)

AR 415-15

Military Construction, Army (MCS) Program Development. (Cited in para 1-4d.)

AR 415-35

Minor Construction. (Cited in paras 1-4d and 2-1g.)

AR 420-10

Facilities Engineering: Management of Installations, Directorate of Engineering and Housing. (Cited in para 1-4d.)

Armed Services Procurement Regulation, Supplement Number 5 (ASPRS No. 5)

Procurement of Utility Services. (Cited in paras 1-1 and 2-1.)

Army Federal Acquisition Regulation Supplement (AFARS).

(Cited in para 2-1.)

Defense Federal Acquisition Regulation Supplement (DFARS).

(Cited in para C-8.)

Section II Related Publications

A related publication is merely a source of additional information. The user does not have to read it to understand this publication.

AR 37-series

Finance and Accounting

DOD Directive 5100-32

Delegation of Authority with Respect to Contracts for Procurement of Public Utility Services (USDRE)

Federal Acquisition Regulation (FAR)

Section III Prescribed Forms

DA Form 2099-R

Contract for Sale of Utilities Services. (Prescribed in para C-2a.)

DA Form 2100-R

Memorandum of Understanding for Sale of Utilities Services. (Prescribed in para C-2b.)

DA Form 2101-R

Special Provisions A (S) Electric Service. (Prescribed in para C-2c.)

DA Form 2102-R

Special Provisions B (S) Gas Service. (Prescribed in para C-2d.)

DA Form 2103-R

Special Provisions C (S) Water Service. (Prescribed in para C-2e.)

DA Form 2104-R

Special Provisions D (S) Sewage Service. (Prescribed in para C-2f.)

DA Form 2105-R

Special Provisions E (S) Steam Service. (Prescribed in para C-2g.)

DA Form 2106-R

Special Provisions F (S) Refuse Disposal Service. (Prescribed in para C-2h.)

Section IV Referenced Forms

DA Form 1144

Support Agreement

Appendix B Technical Information Supporting Acquisitions of Utilities Services

B-1. Execution of contracts

Prior to execution of a contract, and prior to issuance of any solicitation for the acquisition of utilities services, the utilities services/sales officer will provide detailed information supporting the requirements to the responsible approval authority. This information will include—

a. The proposed contract consisting of the basic format, the general and technical provisions, utility service specifications, and the mandatory clauses or clauses incorporated by FAR reference.

b. A full description of the service required, including unusual conditions affecting the service and availability of supply.

c. A statement justifying the need for a firm term requirement and the particular term selected.

d. Complete load data pertaining to the service required identifying—

(1) Present and future requirements.

(2) Estimated annual maximum demand.

(3) Average monthly maximum demand.

(4) Use in terms of commercial units of commodity purchased.

(5) Method of arriving at the above estimates.

(6) For electric service, all available information pertaining to the load and power factors.

e. Information concerning any anticipated connection charges.

f. The proposed rate of the applicable rate schedule.

g. Acquisition strategy; for example, GSA contract, local franchise or public utility, nonregulated distributor of market research performed, full justification and support by certified technical documentation of any proposed noncompetitive acquisition.

B-2. Requirements of statements

Requirements statements forwarded for approval must be submitted in five complete copies with adequate time to allow an in-depth review and approval process.

B-3. Primary electric service or metering discounts

For information about primary electric services or meter discounts, see table B-1.

a. *Combined loads and meter readings.* When practical, combine loads to obtain lowest cost utilities services. Consider the cost of additional facilities required for combining loads. Cost of combining loads at temporary installations will not exceed estimated savings for a 3-year period. When separate meter readings can be billed as one quantity at the same or a lower rate, the method resulting in the lowest overall cost will be employed. This applies not only to the combining of Army loads, but also combining Army with other Government loads when possible.

b. *Meter testing and refunds.* Contract provisions concerning meter test and refunds for inaccurate meters will conform to regulations of the State or local regulatory body having jurisdiction.

B-4. Invoices

Installation commanders will send to the appropriate APPOR a copy

of all supplier's invoices for purchased utilities service that average \$250,000 a year or more. As specified in the contract, the invoice will show the total billing of—

- a. The various quantities and unit prices.
- b. Any adjustment, such as fuel cost, power factor, credits, and discounts.

B-5. Certification of utilities services invoices

a. The installation commander, per AR 210-10, may assign employees to certify invoices. A DEH employee, usually the utility service/sales officer, is assigned this duty. The following documents

must be available for reference and or attachment in the process of certifying an invoice:

- (1) Contract or other procurement document.
- (2) Receiving report or certificate of performance (or equivalent).
- (3) Supplier invoice.
- b. The person who certifies the invoice must ensure before signing the certificate, that—
 - (1) The services have been properly contracted for and received.
 - (2) The invoice agrees with the contract's terms.

B-6. Administration

One copy of the final executed acquisition contract will be provided to the technical approving authority.

Table B-1
Primary electric service or metering discounts

	A	B	C	D
R U L E				
	When electric service is			Then the contract will
	Furnished at	Billed at	Metered at	
1	Secondary voltage	Secondary rates	Primary voltage	Provide a fair discount to the Government for transformer losses.
2	Primary voltage			Provide a fair discount for both transformer losses and Government ownership of transformers.
3		Primary rates	Secondary voltage	Specify the percentage or method used to compensate for losses in the transformer.

Appendix C

Procedures for the Sale of Utilities and Related Services

Section I

Preparation of Sales Contracts

C-1. Responsibilities

- a. The utility services/sales officer will prepare contracts for the sale of utilities and related services.
- b. Sales contracts for utilities services will be authorized by the DEH or by individuals specified in paragraph 3-4.

C-2. Availability of contract forms

The forms listed below are prescribed for use in the sale of utilities and related services. These forms may be locally reproduced on 8½- by 11-inch paper. A copy for reproduction purposes is located at the back of this regulation.

- a. DA Form 2099-R (Contract for Sale of Utilities Services).
- b. DA Form 2100-R (Memorandum of Understanding for Sale of Utilities Services).
- c. DA Form 2101-R (Special Provisions (A(S)—Electric Services).
- d. DA Form 2102-R (Special Provisions B(S)—Gas Service).
- e. DA Form 2103-R (Special Provisions C(S)—Water Service).
- f. DA Form 2104-R (Special Provisions D(S)—Sewage Service).
- g. DA Form 2105-R (Special Provisions E(S)—Steam Service).
- h. DA Form 2106-R (Special Provisions F(S)—Refuse Disposal Service).

C-3. Use of contract forms

a. DA Form 2099-R will be used for sales to all purchasers other than the Federal Government and NAF activities. General provision 1 through 13 on DA Form 2099-R will be used for all sales

contracts. Provisions for local conditions will be recorded in additional clauses to general provisions.

b. DA Form 2100-R will be used for all sales to Federal Government agencies and NAF activities.

c. DD Form 1144 may be used in lieu of DA Form 2100-R at the discretion of the utility services/sales officer. When DD Form 1144 is used, all technical information shown on DA Form 2100-R will be included by reference to or attachment to a formal Memorandum of Understanding.

d. DA Form 2101-R through 2106-R are for use as attachments to DA Form 2099-R or DA Form 2100-R, as required. Additional clauses may be added for local conditions and to protect the Government and keep record of the transaction. When more than one service is supplied to a single purchaser, all the special provisions will be attached to one contract.

e. Sales contracts and DA Forms 2100-R will be executed for the Army by the utilities acquisition/sales officer.

C-4. Metering

The purchaser will pay to install a meter at a new or existing point of delivery when the utilities sales officer determines that a meter is required. Army and Air Force Exchange Service and other NAF activities that pay for service (electric, natural gas, and water, and so forth) will be metered, if practical, when the annual use is estimated to be more than \$360. When a meter is not installed, utilities consumption will be estimated and charged at the contract rate.

Section II

Supporting Information

C-5. Information required for contract approval

Complete supporting information will be furnished for the installation contract file or when sending sales contracts for approval, per paragraph 3-4. This includes—

- a. Estimated total annual receipts from the sale.

- b.* Description of local conditions showing compliance of the proposed contract with this regulation.
- c.* A statement as to the rationale and justification for the sale.
- d.* Copy of detailed computations of the rates and charges.
- e.* Description showing that existing facilities provide enough surplus to serve the proposed purchaser, considering future estimated service requirements of the Army.
- f.* Description of the purchaser's use of the service.
- g.* Any other pertinent information that will aid in review and approval of the contract.

Section III Administration

C-6. Required connecting facilities

Care should be taken to ensure that any additional connecting facilities required to furnish service under contracts for the sale of utilities will be built, maintained, and paid for by the purchaser. The facilities engineer will supervise and approve these functions.

Section IV Distribution

C-7. Copies of sales contracts

Three executed and two conformed copies of sales contracts will be forwarded to the approving authority. One conformed copy will be kept in the files of the approving authority. Sales contracts will be numbered as specified in DFARS 4.7003-1. The utilities services/sales officer will keep the "Official Contract File" on each sales contract. (Include, in the files, executed copies of the contract documents.)

Section V Annual Review

C-8. Required review of utilities services

- a.* Contracts for the sale of utilities services will be reviewed annually by the utilities sales officer, particularly as to rates and the continued necessity and appropriateness of the sale. Rates should be renegotiated when cost of services increase.
- b.* Where consumption's are estimated, the annual review will be documented in the contract files.

Glossary

Section I Abbreviations

ADAPPO

Assistant Deputy Army Power Procurement Officer

AFARS

Army Federal Acquisition Regulation Supplement

APPO

Army Power Procurement Officer

APPOR

Army Power Procurement Officer Representative

DAPPO

Deputy Army Power Procurement Officer

DEH

Director of Engineering and Housing

DFARS

Defense Federal Acquisition Regulation Supplement

DUECC

Defense Utilities Energy Coordinating Council

FAR

Federal Acquisition Regulation

GSA

General Services Administration

MACOM

major Army command

MCA

Military Construction, Army

MWR

Morale, Welfare, and Recreational

NAFI

Nonappropriated Fund Instrumentality

OMA

Operation and Maintenance, Army

OASA(RDA)

Office of the Assistant Secretary of the Army, Research, Development and Acquisition

Section II Terms

Electricity

The generation, transmission, and distribution of electric energy for power and light.

Fuel

Coal, oil, gas (natural, manufactured, and liquefied petroleum), wood and electricity for space heating, water heating, and steam generation.

Garbage

Refuse, animal or vegetable matter, as from a kitchen.

Heat

The energy in transition or transfer from one body to another by virtue of a temperature difference existing between the two bodies.

Local prevailing rate

The rate a customer would be charged for a particular class of service if the service could be obtained directly from the installation's utility supplier or the nearest supplier.

Mechanical refrigeration

Both electrical and gas-operated units.

Sales contracts

DA Form 2100-R, and DD Form 1144.

Sewage

The waste matter from domestic, commercial, and industrial establishments carried off in sewers.

Utilities and related services (sale only)

Electric power, steam, heat, hot water, water, compressed air, gas (natural, manufactured, liquefied petroleum, or mixed), fuel oil, ice, air conditioning, mechanical refrigeration, sewage, garbage, refuse disposal.

Utility services (purchase)

Electricity, gas, water, steam, and other such services not subject to the Service Contract Act of 1965.

Water

The supply and distribution of water for domestic and industrial use and fire protection.

Section III

Special Abbreviations and Terms

There are no special terms.

RESERVED

CONTRACT FOR SALE OF UTILITIES SERVICES

For use of this form, see AR 420-41; the proponent agency is the Office of the Chief of Engineers

Contract No. _____
Estimated Annual
Cost to Purchaser \$ _____

THIS CONTRACT, entered into this _____ day of _____, 19____ by and between the UNITED STATES OF AMERICA (*hereinafter called the "Government"*), represented by the Utilities Sales Officer executing this contract and

(*Hereinafter called the "Purchaser"*)

WITNESSETH THAT:

WHEREAS, the Government has established an _____
_____ near _____

Known as _____, and owns, maintains and operates facilities for the furnishing of _____ service and

WHEREAS, the Purchaser desires to obtain _____
service from the Government, as required for _____

_____, and which cannot be readily obtained from any other source; and

WHEREAS, construction of facilities in connection with the sale of such service to the Purchaser will not hinder the construction of public or private utility service facilities of a like nature;

WHEREAS, PURSUANT TO 10 USC 2481 the Government is authorized to sell utility service required by the Purchaser;

NOW, THEREFORE, in consideration of the premises and the mutual agreement herein contained, to be performed by the parties hereto respectively, it is agreed as follows:

GENERAL PROVISIONS

1. **SERVICES TO BE RENDERED.** From and after the effective date of this contract, the government will furnish, subject to the limitations hereinafter provided, and the Purchaser will furnish, subject to the limitations hereinafter provided, and the Purchaser will receive and pay for such utility services as described in Special Provisions attached hereto and made a part hereof.
2. **PAYMENTS.** For and in consideration of the performance of the stipulations of this contract, the Purchaser shall pay the Government for service herein contracted for, at the rates and under the terms and conditions set forth in attached Special Provisions.
3. **USE OF SERVICE.** The Government, by reason of this contract, is not DA obligated to permanently supply the Purchaser with utility service. The service described herein is temporarily supplied as an accommodation to Purchaser as Government service is presently available, service is not otherwise readily obtainable by the Purchaser, and the furnishing of such service under the existing conditions is deemed to be in the public interest. Purchaser's use of such service is limited to such time as service can be supplied by the Government as surplus to its own needs, the Government has facilities and personnel available to supply the service and the service is not readily available to the Purchaser from another source. Purchaser shall use the services provided herein in such manner as not to in any way disrupt or interfere with the requirements of the Government of any other Purchase that may be served by the Government. Such services shall be for use by Purchaser and shall not be purchased for resale.
4. **CHANGE OF RATES.** The rates for service to be charged the Purchaser shall be the local prevailing rates, if any, for similar service, provided that the rates shall at all times produce a revenue which is not less than the cost to the Government of supplying the service, including losses, overhead, and capital charges. If during the life of this contract there should be an appreciable change in the applicable local prevailing rates or in the cost to the Government, the contract rates set forth herein will be adjusted as required to conform therewith and the Government agrees to furnish, subject to the conditions set forth herein, and the Purchaser agrees to take and pay for, such service at the adjusted rates from and after the date when such adjusted rates are made effective. The rates and charges applicable to the service or services contemplated herein will be renewed annually, or more often if necessary, in compliance with the above requirements.
5. **LIABILITY.** The Purchaser shall hold and save the Government, its officer, agents and employees, harmless from liability of any kind, for or on account of any claim or action that may be asserted in connection with the services furnished under this contract. The Government will not be held liable for failure to provide continuous service and will not guarantee quality or quantity of service to be supplied nor will the Government be made liable for termination of services.

-
6. **TERMINATION.** Services under this contract may be terminated by either party by written notice not less than thirty days in advance of the effective date of termination, provided that in the event of a national emergency proclaimed by the President, the Government may terminate this contract immediately without such advance notice. It is further mutually agreed that this contract will be terminated at such time as
- The service contemplated herein becomes readily available from another source, or
 - The installation furnishing said service becomes inactive, or
 - The Government no longer has facilities and/or personnel available to supply the service, or
 - The Government can no longer supply such service as surplus to its own needs.
7. **RECAPTURE.** In the event this contract is terminated in accordance with the terms hereof, the Government shall have the right to recapture immediately any utility facility it may have furnished in connection with the sale of any utility service to the Purchaser.
8. **FACILITIES TO BE PROVIDED.** The Government shall not be obligated in any way for the cost of making connections for Purchaser's service. Purchaser shall, at Purchaser's expense, install, maintain and operate all new facilities required for obtaining service, including suitable metering and regulating equipment and service connections to Government's utility system. Plans for all such facilities shall be subject to the approval of the Utilities Sales Officer and the installation of such facilities shall be subject to his supervision.
9. **LICENSE FOR FACILITIES.** The Government hereby grants to the Purchaser a license to enter upon and use a site or sites to be agreed upon between the parties hereto upon which the Purchaser shall install, operate and maintain the Purchaser's new facilities to be located on Government property for obtaining service; and such license shall continue in effect until termination of this contract. Facilities installed by the Purchaser on a Government installation will be removed promptly at the expense of the Purchaser upon termination of the service contemplated herein. Government land and facilities will be restored to their original condition at the expense of the Purchaser. If the Purchaser fails to so remove such facilities within ninety (90) days, they will be deemed to be abandoned and become Government property.
10. **OFFICIAL NOT TO BENEFIT.** No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this contract, or to any benefit arising from it. However, this clause does not apply to this contract to the extent that this contract is made with a corporation for the corporation's general benefit.
11. **COVENANT AGAINST CONTINGENT FEES.** The Purchaser warrants that no person or selling agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, at its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.
- "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.
- "Bona fide employee," as used in this clause, means a person employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain Government contract or contracts through improper influence.
- "Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.
- "Improper influence," as used in this clause, means any influences or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.
12. **DISPUTES.**
- This contract is subject to the Contract Disputes Act of 1978 (41 U.S.C. 601-613) (*the Act*).
 - Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.
 - "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a certain sum, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. However, a written demand or written assertion by the Contractor seeking the payment or money exceeding \$50,000 is not a claim under the Act until certified as required by subparagraph d. (1) below. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, it is disrupted either as to liability or amount or is not acted upon in a reasonable time.
 - A claim by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.
 - For Contractor claims exceeding \$50,000, the Contractor shall submit with the claim a certification that:
 - The claim is made in good faith.
 - Supporting data are accurate and complete to the best of the Contractor's knowledge and belief.
-

(c) The amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable.

(2) Certification.

(a) If the Contractor is an individual, the certification shall be executed by that individual.

(b) If the Contractor is an individual, the certification shall be executed by:

1 A senior company official in charge at the Contractor's plant or location involved; or

2 An officer or general partner of the Contractor having overall responsibility for the conduct of the Contractor's affairs.

e. For Contractor claims \$50,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$50,000, the Contracting Officer must, within 60 days decide the claim or notify the Contractor of the date by which the decision will be made.

f. The Contracting officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

g. The Government shall pay interest on the amount found due and unpaid from:

(1) The date the Contracting Officer receives the claim (*properly certified if required*), or

(2) The date payment otherwise would be due, if that date is later, until the date of payment. Simple interest on claims shall be paid at the rate fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6 -month period as fixed by the Treasury Secretary during the pendency of the claim.

h. The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

i. The requirements of the Disputes clause at FAR 52.233.1 are supplemented to provide that matters involving the interpretation of retail rates, rate schedules, tariffs, riders, and tariff related terms provided under this contract and conditions of service are subject to the jurisdiction and regulation of the utility rate commission having jurisdiction.

13. DEFINITIONS. As used throughout this contract, the following terms shall have the meanings set forth below:

a. The term "Secretary" means the Secretary, the Under Secretary, or any Assistant Secretary of the Department and the head of the Federal agency; and the term "his duly authorized representative" means any person or persons or board (*other than the Contracting Officer*) authorized to act for the Secretary.

b. The term "Contracting Officer" means the person executing this contract on behalf of the Government, and any other officer or civilian employee who is a properly designated Contracting Officer; and the term includes, except as otherwise provided in this contract, the authorized representative of a Contracting Officer acting within the limits of his authority.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the day and year first above written.

Witness as to Signature of Purchaser

THE UNITED STATES OF AMERICA

by _____

(Address)

(Official Title)

(Purchaser)

(Address)

(Business Address)

MEMORANDUM OF UNDERSTANDING FOR SALE OF UTILITIES SERVICES

For use of this form, see AR 420-41; the proponent agency is the Office of the Chief of Engineers

Contract No. _____
Estimated Annual
Cost to Purchaser \$ _____

THIS AGREEMENT, entered into this _____ day of _____, 19____ by and between the DEPARTMENT OF THE ARMY, an agency of the United States Government, (*hereinafter called the Army*), represented by the Utilities Sales Officer executing this agreement and

(*Hereinafter called the "Purchaser"*)

WITNESSETH THAT:

WHEREAS, the Army has established an _____ near _____ known as _____ and owns, maintains and operates facilities for the furnishing of _____ service; and

WHEREAS, the Purchaser desires to obtain _____ service from the Army, as required for _____, and

WHEREAS, the Army is authorized to supply the service and the Purchaser is authorized to pay for the service pursuant to the terms of the Economy Act of 30 June 1932, 47 Stat. 417 as amended, (31 USC 686);

NOW, THEREFORE, in consideration of the premises and of the mutual agreements herein contained, to the performed by the parties hereto respectively, it is agreed as follows:

GENERAL PROVISIONS

1. **SERVICE TO BE RENDERED.** From and after the effective date of this agreement, the Army will furnish on a reimbursable basis, and subject to the conditions hereinafter provided, utility service or services as described in Special Provisions _____
_____ attached hereto and made a part hereof.
2. **PAYMENTS.** The Purchaser shall reimburse the Army for the utility service or services described herein at the rates and under the terms and conditions set forth in the attached Special Provisions.
3. **USE OF SERVICE.** The Army, by reason of this agreement is not obligated to permanently supply the Purchaser with utility service. The service described herein is limited to such time as the service can be supplied by the Army as surplus to its own needs. Purchaser shall use the service provided herein in such a manner as to not in any way disrupt or interfere with the requirements of the Army or any other Purchaser that may be served by the Army.
4. **CHANGE OF RATES.** The rates for service to be charged the Purchaser shall be the local prevailing rates, if any, for similar service, provided that the rates shall at all times produce a revenue which is not less than the cost to the Government of supplying the service, including losses, overhead, and capital charges. If during the life of this contract there should be an appreciable change in the applicable local prevailing rates or in the cost to the Government, the contract rates set forth herein will be adjusted as required to conform therewith and the Government agrees to furnish, subject to the conditions set forth herein, and the Purchaser agrees to take and pay for, such service at the adjusted rates from and after the date when such adjusted rates are made effective. The rates and charges applicable to the service or services contemplated herein will be renewed annually, or more often if necessary, in compliance with the above requirements.
5. **TERMINATION.** Services under this agreement may be terminated by either party by written notice not less than thirty (30) days in advance of the effective date of termination. In the event of a national emergency proclaimed by the President having an effect on the Army's service requirements, the Army may at its decision, terminate this agreement immediately without such advance notice.

-
6. **FACILITIES TO BE PROVIDED.** The Army shall not be obligated in any way for the cost of making connections for Purchaser's service. Purchaser shall, at Purchaser's expense, install, maintain and operate all new facilities required for obtaining service, including suitable metering and regulating equipment and service connections to Army's utility system. Plans for all such facilities shall be subject to the approval of the Utilities Sales Officer and the installation of such facilities shall be subject to his/her supervision.
7. **LICENSE FOR FACILITIES.** The Army hereby grants to the Purchaser a license to enter upon and use a site or sites to be agreed upon between the parties hereto upon which the Purchaser shall install, operate and maintain the Purchaser's new facilities to be located on Government property for obtaining service; and such license shall continue in effect until termination of this agreement. Facilities installed by the Purchaser on an Army installation will be removed promptly at the expense of the Purchaser upon termination of the service contemplated herein. Army land and facilities will be restored to their original condition at the expense of the Purchaser. If the Purchaser fails to so remove such facilities within ninety (90) days they will be deemed to be abandoned and become Army Property.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the day and year first above written.

THE DEPARTMENT OF THE ARMY

BY _____

(Official Title)

(Purchaser)

(Title)

**SPECIAL PROVISIONS A (S)
ELECTRIC SERVICE**

For use of this form, see AR 420-41; the proponent agency is the Office of the Chief of Engineers

1. ESTIMATED REQUIREMENTS.

Estimated maximum demand _____ Kw

Estimated annual consumption _____ kwh

(The parties hereto are not obligated to deliver or receive, nor are they restricted to, the above amounts.)

2. POINT OF DELIVERY. The point of delivery of service shall be

3. DESCRIPTION OF ELECTRIC SERVICE. The Government will supply _____ phase,
_____ wire _____ cycle, alternating
current at _____ volts.

4. RATES. The rates to be charged the Purchaser by the Government for the electric service described herein, are as follows:

5. METERING AND BILLING. Service will be measured at _____ volts by
_____ watt-hour meter(s) and _____ demand meter(s) to
be furnished, installed and maintained by the Purchaser. The meter(s) will be read by the Utilities Sales Officer, or his or
her authorized representative, and bills will be rendered monthly to the Purchaser by the Government. All such
bills will be due and payable 15 days after receipt thereof by the Purchaser.

6. ALTERATIONS AND ADDITIONS.

**SPECIAL PROVISIONS B (S)
GAS SERVICE**

For use of this form, see AR 420-41; the proponent agency is the Office of the Chief of Engineers

1. ESTIMATED REQUIREMENTS.

Estimated maximum demand _____ Mcf per hour
Estimated annual consumption _____ Mcf

(The parties hereto are not obligated to deliver or receive, nor are they restricted to, the above amounts.)

2. POINT OF DELIVERY. The point of delivery of gas shall be the point of connection with Government's gas main, and located _____

3. QUALITY OF GAS. The Government is supplied with *(natural)* *(manufactured)* gas by _____

_____ and will supply the Purchaser with gas of similar characteristics as the gas received by the Government.

4. RATES. The rates to be charged the Purchaser by the Government for the gas service described herein, are as follows:

Adjustments, if any, made by Government's supplier in the price of the gas received by Government, because of variation in heat content, will be proportionately applied to the above rate schedule.

5. UNITS OF MEASURE. The method of determining the volume of gas in cubic feet, or the quantity of heat units in therms, delivered to the Purchaser by the Government, shall be the same as that used to determine the amount of cubic feet or therms delivered to the Government by its supplier.

6. METERING AND BILLING. Gas will be measured by _____
(displacement) *(orifice)* meter(s) to be furnished, installed and maintained by the Purchaser. The meter(s) will be read by the Utilities Sales Officer, or his authorized representative, and bills will be rendered monthly to the Purchaser by the Government. All such bills will be due and payable 15 days after receipt thereof by the Purchaser.

7. ALTERATIONS AND ADDITIONS.

**SPECIAL PROVISIONS C (S)
WATER SERVICE**

For use of this form, see AR 420-41; the proponent agency is the Office of the Chief of Engineers

1. ESTIMATED REQUIREMENTS.

Estimated maximum demand _____
Estimated annual consumption _____

(The parties hereto are not obligated to deliver or receive, nor are they restricted to, the above amounts.)

2. POINT OF DELIVERY. The point of delivery of water shall be the point of connection with Government's water main, and located _____

3. QUALITY OF WATER. The Government will supply the same quality of potable water as supplied to _____ by means of its water system located at the said _____

4. RATES. The rates to be charged the Purchaser by the Government for the water service described herein, are as follows:

5. METERING AND BILLING. Water will be measured by _____ inch meter(s) to be furnished, installed and maintained by the Purchaser. The meter(s) will be read by the Utilities Sales Officer, or his or her authorized representative, and bills will be rendered monthly to the Purchaser by the Government. All such bills will be due and payable 15 days after receipt thereof by the Purchaser.

6. ALTERATIONS AND ADDITIONS.

**SPECIAL PROVISIONS D (S)
SEWAGE SERVICE**

For use of this form, see AR 420-41; the proponent agency is the Office of the Chief of Engineers

1. ESTIMATED REQUIREMENTS.

Estimated annual volume _____

(The parties hereto are not obligated to deliver or receive, nor are they restricted to, the above amounts.)

2. POINT OF DELIVERY. The sewage shall be delivered to the government by the Purchaser at _____

3. SERVICE TO BE RENDERED. The sewage to be received, carried and disposed hereunder shall be such as is customarily received at the Government's disposal plant, and shall not contain any material which would case an unusual burden upon the said sewage disposal plant or interfere with the operation of the Government's sewage system.

4. RATES. The rates to be charged the Purchaser by the Government for the sewage service described herein, are as follows:

5. METERING AND BILLING.

(NOTE: Either of the provisions (a) or (b) below may be used, whichever is applicable.)

a. The sewage received by the Government will be measured by a _____ type meter to be furnished, installed, and maintained by the Purchaser.

b. The quantity of sewage received by the Government will be taken as _____ percent of the metered quantity of water used by the Purchaser.

The meter(s) will be read by the Utilities Sales Officer, or his or her authorized representative, and bills will be rendered monthly to the Purchaser by the Government. All such bills will be due and payable 15 days after receipt thereof by the Purchaser.

6. ALTERATIONS AND ADDITIONS.

**SPECIAL PROVISIONS E (S)
STEAM SERVICE**

For use of this form, see AR 420-41; the proponent agency is the Office of the Chief of Engineers

1. ESTIMATED REQUIREMENTS.

Estimated maximum demand _____

Estimated annual consumption _____

(The parties hereto are not obligated to deliver or receive, nor are they restricted to, the above amounts.)

2. POINT OF DELIVERY. The point of delivery of steam shall be the point of connection with Government's steam main, and located _____

3. DESCRIPTION OF STEAM SERVICE. The Government will supply the same quality of steam as supplied to _____
by means of its steam plant and distribution system located at the said _____

The steam pressure will be that normally maintained in Government's steam main at point of delivery, approximately _____ pounds per square inch. Any deviation from the above described pressure that may be required for Purchaser's use, will be obtained by means of regulating equipment furnished, installed and maintained by the Purchaser.

4. RATES. The rates to be charged the Purchaser by the Government for the steam service described herein, are as follows:

5. METERING AND BILLING. Steam will be measured by _____
(Condensate)

_____ meter(s) furnished, installed and maintained by the Purchaser.
(flow)

Where condensate meters are used, Purchaser's facilities for metering and use of steam shall be so constructed and operated that no steam will escape and the condensate from all steam supplied to the Purchaser will pass through the meter. The meters will be read by the Utilities Sales Officer, or his or her authorized representative, and bills will be rendered monthly to the Purchaser by the Government. All such bills will be due and payable 15 days after receipt thereof by the Purchaser.

6. ALTERATIONS AND ADDITIONS.

**SPECIAL PROVISIONS F (S)
REFUSE DISPOSAL SERVICE**

For use of this form, see AR 420-41; the proponent agency is the Office of the Chief of Engineers

1. ESTIMATED REQUIREMENTS.

Estimated quantity or refuse per month _____ Cu. yards.

Frequency of collections _____ per month

(The parties hereto are not obligated to deliver or receive, nor are they restricted to, the above amounts.)

2. POINT OF DELIVERY. The refuse shall be delivered to the Government by the Purchaser in the following manner:

3. SERVICE TO BE RENDERED. When placed by the Purchaser as described in paragraph 2 of these Special Provisions such refuse shall be collected and disposed of by the Government in the same manner in which all refuse disposal service is provided on the military installation. The refuse to be received and disposed of hereunder shall be such as is customarily received at the Government's sanitary fill or other place of disposal, as may be designated from time to time, and shall not contain any material which will impose an unusual burden upon the normal operations of the Government.

4. RATES. The rates to be charged the Purchaser by the Government for the refuse disposal described herein, are as follows:

5. BILLING. Bills will be rendered monthly to the Purchaser by the Government. All such bills will be due and payable 15 days after receipt thereof by Purchaser.

6. ALTERATIONS AND ADDITIONS.

Unclassified

PIN 003284-000

Appendix C - Technical Note (TN) 420-41-1

- ***Technical Note (TN) 420-41-1 (Revision 1)*, 21 January 1992, Directorate of Army Power Procurement - Utilities Contracts - Guidance for Calculation of Rates for the Sale of Utilities Services.**

DEPARTMENT OF THE ARMY
US Army Engineering and Housing Support Center
Fort Belvoir, VA 22060-5516

Technical Note
No.420-41-1(Revision 1)

21 January 1992

DIRECTORATE OF ARMY POWER PROCUREMENT
UTILITIES CONTRACTS

GUIDANCE FOR CALCULATION OF RATES
FOR THE SALE OF UTILITIES SERVICES

1. Purpose. The purpose of this technical note is to provide guidance to MACOMs and installations for the development of rates for the sale of utilities services by Army installations.
2. Applicability. This Technical Note applies to all facilities engineering and housing activities in CONUS and OCONUS. All other guidelines presently in use by various installations will be replaced by this Technical Note.
3. References:
 - a. AR 420-41, Facilities Engineering, Acquisition and Sale of Utilities Services dated 15 September 1990.
 - b. AR 215-1, The Administration of Army Morale, Welfare, and Recreation Activities and Nonappropriated Fund Instrumentalities dated 10 October 1990.
4. Discussion.
 - a. Reference 3a requires that all contracts for the sales of utilities services be reviewed annually. The utilities services/sales officer will determine the correctness of rates and the continued necessity of the sales. Rates shall be changed when costs of services increase. Every installation should use a standard format to present the computation of the rates. This will facilitate review by the Army Power Procurement Officer Representative.
 - b. Reference 3b governs the Army's Morale, Welfare, and Recreation (MWR) system and supporting Nonappropriated Fund Instrumentalities (NAFIs).

This technical note supersedes Technical Note 420-41-1 dated 1 September 1989.

Technical Note No. 420-41-1(Revision 1)
21 January 1992

c. Appendices A through C provide the guidance necessary to develop a standard system for the computation of rates for the sales of utilities services on Army installations as follows:

- (1) Appendix A - Detailed Guidance
- (2) Appendix B - Categories and Rates
- (3) Appendix C - Rate Calculations

5. Point of Contact. Questions regarding the sales of utilities services in Army installations should be directed to the Deputy Army Power Procurement Officer, U.S. Army Engineering and Housing Support Center, ATTN: CEHSC-C, Fort Belvoir, VA 22060-5516 at DSN 345-7362 or Commercial 703-355-7362.

FOR THE DIRECTOR:



THOMAS J. EVANS, P.E.
Deputy Army Power Procurement Officer

Encls.

Technical Note No. 420-41-1(Revision 1)
21 January 1992

APPENDIX A
GUIDANCE FOR CALCULATION OF RATES
FOR THE SALE OF UTILITIES SERVICES

DIRECTORATE OF ARMY POWER PROCUREMENT
US ARMY ENGINEERING AND HOUSING SUPPORT CENTER
FORT BELVOIR, VIRGINIA 22060-5516

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CHAPTER 1 - Introduction

1-1. Purpose. This Technical Note helps explain Army procedures for the sale of utility services. Procedures to develop contracts for the sale of utilities services, negotiate sales contracts and for the use of proper forms are found in Chapter 3 and Appendix C of AR 420-41.

1-2. Scope. Within this guide, detailed information is provided for:

- a. Categories of Purchasers and Rate Classes.
- b. Components of Rates.
- c. Consumption Determination.
- d. Rates Computations.
- e. Meter Reading.
- f. Billing.
- g. Determination of categories and rates.
- h. Rate calculations with formats.

Chapter II - Categories of Purchasers and Rate Classes

2-1. Categories. Purchasers with a common rate class or common exceptions imposed by one Army Regulation are placed under one title called a category. The categories of purchasers listed below and in Appendix B have been expanded over those in AR 420-41, Chapter 3-2, to furnish more information on applicable rate classes and references to governing regulations.

a. Army. Included in this major group are all buildings, structures, facilities, and activities under Army jurisdiction which are located on Army owned or leased property and operated with Army appropriated or non appropriated funds. Activities required to reimburse the Government for utility services, in part or entirely, are listed below and in Appendix B.

(1) Morale, Welfare and Recreational (MWR) Activities. AR 215-1, Chapter 2, Section IV - gives titles to the categories and names the types of activities within categories. Category titles and number of types of activities listed in each are:

(a) Category A. Mission Sustaining Activities. Ten types of activities.

(b) Category B. Basic Community Support Activities. Nine types of activities.

(c) Category C. Business Activities. Twenty two types of activities. Included in these 22 types is the Army and Air Force Exchange Service with 19 related activities, some of which are normally operated by concessionaires, and the supplemental mission activities/funds with 13 other operations.

(2) Family Housing. Army owned or controlled housing.

(3) Rental Quarters. Quarters owned or controlled by the Army and rented to military or civilian personnel.

b. Other DOD Activities. This includes Air Force, Navy and Defense Agencies.

c. Federal Non-DOD. Includes executive departments, independent establishments of the Government and related bureaus other than DOD related. Some examples are: Federal Aviation Administration and the U.S. Coast Guard.

d. State and Local Governments. The National Guard and public schools.

- e. Private Organizations. Three types of Private Organizations (POs).
 - (1) Type 1 - Federally Sanctioned.
 - (2) Type 2 - Affiliated.
 - (3) Type 3 - Independent.
 - f. Commissaries and Related Areas.
 - g. Lessees. Lessees of Army facilities for private commercial purposes.
 - h. Contractors.
 - (1) An individual, firm, or corporation which is performing work on the installation as a designated contractor.
 - (2) Construction. A construction type contractor working on an installation using Military Construction, Army funds.
 - i. Vending Machines. Not a true category, but listed here and in Appendix B because of its high visibility. Vending machines are defined as private machines used for retail sales. The Rate class for the machine will be the same as for the owner.
 - j. Public and Private Utility Companies. Sales are limited to electrical energy generated from alternate energy or cogeneration type production facilities under Army jurisdiction.
 - k. Purchasers Located Off-Post. Purchasers located outside the installation property are limited in their purchasing capability as specified in AR 420-41.
- 2-2. Army Rate Classes. A Rate Class is a division of rates for specified user groups which are set by AR 420-41 and other Army Regulations listed in the NOTES FOR APPENDIX B. Classification of utility services rates for activities are set by AR 420-41. Appendix B lists the Categories of purchasers with their rate classes. Notes provide the titles of the governing ARs. Extracts of the ARs explain exceptions. Rates are always specified as a unit cost.
- a. Rate A. This rate represents costs to produce and distribute a utility service. Costs included in Rate A are:
 - (1) Operation and Maintenance of the installation utility plant. When the utility service is purchased rather than generated, the purchase cost replaces the installation utility plant Operations and Maintenance cost.

(2) Operation and Maintenance costs of the distribution or collection systems.

(3) Line losses of the distribution system or gains of the collection system.

(4) Other related costs not included in O&M or line losses or gain. (Chapter III, paragraph 3-5).

b. Rate B. This rate represents the cost for Rate A plus Capital and Administrative Costs. Costs included in this rate are:

(1) Operation and Maintenance of the installation utility plant. When the utility service is purchased rather than generated, the purchase cost replaces the installation utility plant Operations and Maintenance cost.

(2) Operation and Maintenance Costs of the distribution or collection systems.

(3) Line losses of the distribution system or gains of the collection system.

(4) Other related costs not included in O&M or line losses (Chapter III, paragraph 3-5).

(5) Capital Cost.

(6) Administrative cost.

c. Local Prevailing Rate (LPR). This rate represents a cost equal to that charged to a particular customer class or type by the nearest supplier of a similar class or type of utility service.

Chapter III - Components of Rates

3-1. Rate Determination. Each rate class is determined by a specific group of costs associated with the utility service. Components are those costs associated with the production, delivery, Government expenditure for facilities and administration of the function. These components are discussed under the following headings.

3-2. Operation and Maintenance (O&M) Costs. O&M costs are expenses for materials and labor (in house or contract) to operate systems, and maintain the Army owned facilities. Specific codes in the Army Management Structure are used to collect costs for operation and maintenance of a utility system. Prior fiscal year data is used in the annual rate calculations.

3-3. Purchased Utilities Services. When utilities services are purchased, the unit cost of the purchased utility replaces the Operation and Maintenance Costs of plants as a part of the O&M component. Use the unit cost specified in the purchase contract for all services except electrical. Electrical service rates are made up of many parts which vary with the amount and manner of use. Therefore, the correct method to determine the average Government purchase rate is to divide the total annual cost by the total annual units consumed.

3-4. Line Losses or Gains. Line losses are associated with distribution systems. Line gains are associated with collection systems. Losses or gains are factored into the costs as a percentage of the Operations and Maintenance unit cost. Suggested loss or gain percentages are given in Appendix C for each type of utility. **When installation data indicates that other percentages are appropriate, use that data in place of the suggested percentages.** The factors which affect the line losses or gains are summarized for each service.

a. Electrical Systems. Line losses are dependent on voltage, wire size, length of run and age or condition of the system. Calculations of line losses can be accomplished using local formulae or formulae in the National Electrical Code (NEC) or National Electrical Manufacturers Association (NEMA) Handbook.

b. Water. Line losses are dependent on pressure, size and type of pipe, condition of joints and length of run. Calculation of line losses may be according to the National Plumbing Code or local formulae.

c. Gas. Line losses are dependent on pressure, size and type of pipe, condition of joints and length of run.

d. Steam, Hot Water. Line losses are dependent on size and type of pipe, insulation, condition of joints and length of run.

e. Compressed Air. Line losses are dependent on pressure, size and type of pipe, condition of joints and length of run.

f. Mechanical Refrigeration or Air Conditioning from Central Plants. Line losses are dependent on pressure, size and type of pipe, location (above or below ground), insulation, and length of run.

g. Gains of Sewage Collection Systems. Infiltration (gain) varies with the length and diameter of the sewer line, its material, the care used in construction, the depth of the line below the water table, and type of joints used.

h. No line losses or gains are associated with the following utilities sales because of method of delivery:

- (1) Ice.
- (2) Garbage.
- (3) Refuse Disposal.

3-5. Other Utility Costs. These are the costs of power and other utilities that are not included in O&M accounts, which are required to produce the service. The cost of electric power to operate pumps is one example.

3-6. Capital Charges. Capital Charges are computed as 10 percent of capital costs which include the original cost of facilities plus any Military Construction Army (MCA) cost for improvements, conversions or upgrades for a particular utility service. Capital cost figures may be obtained from Real Property Records or the Integrated Information Systems Assets Accounting Module (IFSAAM), where available. The annual capital charges are computed as 10% of the cost of the Army plant and the distribution or collection systems providing services. See Appendix C for calculation methodology.

3-7. Administrative Overhead. This cost includes meter reading, billing, administration and other indirect costs. Administrative overhead is set at 3% of the sum of unit costs for O&M, line losses or gains, other costs, and capital charges.

Chapter IV - Consumption Determination

4-1. Metered Service. Meters are the preferred method for determining consumption except when the annual charge for service is estimated at less than \$360 per year. Procedures for meter reading are discussed in Section VI.

4-2. Non-Metered Service. Various methods are suggested in this paragraph to compute consumption. Select the method most suitable, considering the total amount that the purchaser will pay, the manpower available to the utilities services/sales officer, funding available for equipment or studies, and MACOM preferences. Four methods to compute non-metered consumption are described below. Comments on their application for each type of utility service are made in the next sub-paragraphs.

a. Temporary Metering. A temporary meter may be used to collect data during periods of typical use. Bills (monthly or for other selected periods) are based on results of temporary metering. Significant changes to purchaser's operations or equipment use will require re-measurement.

b. Comparison. When the consumption by a similar facility or activity where consumption has been determined by metering or engineering analysis is used as a basis for estimate. Adjustments for slight variations in structure, equipment, and purchaser's operations, may be made using either consumption tables or engineering analysis.

c. Consumption Tables. Design Manuals, Facility Planning Manuals, and Association Handbooks may contain tables with number of units used on the basis of per square foot per person, or some other relationship. The consumption may then be estimated from the tabular values. Be sure that the underlying assumptions in the table correspond to those of the activity under consideration.

d. Engineering Analysis. Data is collected on all physical properties of the purchaser's facility and method of operation. Examples of data collected are: dimensions of the space used, properties of building components including R-Values, properties of equipment, hours of operation, number of employees, and number of visitors. Consumption is determined by engineering calculations following methods and formulae from industry or Government manuals or handbooks.

4-3. Application of Methods. The four methods for estimating consumption for each utility services are discussed below:

a. Electric Power. Consumption is usually measured in kilowatt hours (KWH).

(1) Temporary Metering. Relatively inexpensive, and readily installed and removed. Care needs to be exercised in selecting a period

representing typical use.

(2) Comparison. Most appropriate when only lighting loads and equipment loads are connected to the electric power. Variations in the number of light fixtures or pieces of equipment may be adjusted with minimum calculations. It may become complex when the electric power for heating and cooling is added to the lighting and equipment loads in a multi-use building.

(3) Consumption Tables. The unit lighting loads per square foot by type of occupancy are listed in Table 220-3(b) of the 1990 National Electric Code Handbook. Other Handbooks or design manuals may contain similar tables which can be used. Consumption tables for equipment are not available because of the great variety of equipment for the same type of occupancy.

(4) Engineering Analysis. Data collected will consist of: lighting wattage, equipment, and other devices connected to the electric system and hours of operation. Calculations can be made for any time period selected using the procedures in the National Electrical Manufacturers Association Handbook, Total Energy Management.

b. Water. Consumption is usually measured in thousands of gallons (Kgal).

(1) Temporary Metering. Installation and removal of a temporary meter may be practical or impracticable depending on location of the pipe where a temporary meter would be attached. The cost of installation and removal in comparison to the expected monthly charge should be the basis for making a decision on the use of temporary metering.

(2) Comparison. If similar operations and like facilities exist, this is a practical and economical method.

(3) Consumption Tables. Tables are available for average daily gallons used per capita by facility type. Army design manuals may be used. Table values multiplied by number of users provides an estimate of consumption with a minimum of data collection and computation effort.

(4) Engineering Analysis. Use methods specified in the National Plumbing Code Handbook.

c. Gas. Natural and other Gas used for heating. Consumption is usually measured in Million British Thermal Units (MBTU) or million cubic feet (MCF).

(1) Temporary metering. Suitable if resources required for temporary metering are justified by the amount of the annual charge.

(2) Comparison. Adequate where space, construction and heating equipment are similar.

(3) Consumption Tables. Usually given only for each piece of equipment in terms of cubic feet of gas used per unit of time. An engineering analysis must be made to obtain satisfactory estimates. See (4) immediately following.

(4) Engineering Analysis. Gather data on non heating equipment being furnished gas and the time periods that the equipment is in operation. From manufacturer's manuals determine cubic feet of gas used during the period of time and multiply it by the hours of operation to obtain MCF consumption of non-heating gas operated equipment. For heating equipment using gas, the heating requirements have to be computed first. Follow procedures as stated in d.(4) below. Then the gas used in heating equipment may be computed using the manufacturer's data on the amount of gas required to produce the heat requirement.

d. Steam, Hot Water. Consumption is usually measured in Million British Thermal Units (MBTU).

(1) Temporary Metering. Suitable method with regard to cost benefits.

(2) Comparison. Adequate when similar facilities and functions exist.

(3) Consumption Tables. Not recommended due to the great variation in the equipment used, types of operations, and weather conditions.

(4) Engineering Analysis. Collect data and calculate using the method in Chapter 25, Heating Load, of the 1985 American Society of Heating, Refrigeration and Air Conditioning Engineers Handbook of Fundamentals. This chapter covers:

- a. general procedures
- b. design conditions
- c. estimating temperature in adjacent unheated spaces
- d. calculating heat loss from crawl spaces
- e. calculating transmission heat losses
- f. calculating heat losses caused by infiltration
- g. internal heat sources and pick-up loads.

e. Compressed Air. Consumption is usually measured in thousands of Cubic Feet (KCF) at a given pressure.

(1) Temporary Metering. Usually economical but it may be difficult to determine the time of typical use.

(2) Comparison. Adequate when like equipment and usage exist and have been calculated from tables.

(3) Consumption Tables. Equipment manuals provide indirect power required for operation.

(4) Engineering Analysis. Collection of information on number of pieces of equipment, delivery rate and periods of use. Calculate consumption of air and electric power required to produce the air.

f. Mechanical Refrigeration, Air conditioning. Consumption is usually measured in tons.

(1) Temporary Metering. Not practical unless electric power is the unit of measure for consumption.

(2) Comparison. Suitable when information on the physical properties of the compared facility and estimated facilities are readily obtained.

(3) Consumption Tables. Design tables contained in the 1979 Handbook of Air Conditioning, Heating and Ventilation, by Eugene Stomper, Editor, Industrial Press Inc. Refer to Chapter 2, Table 1, Design Data for Commercial Air Conditioning, and Table 2, Cooling Load Calculations.

(4) Engineering Analysis. Collect data and follow the calculation method in Chapter 26, Air Conditioning Cooling Load, of the 1985 American Society of Heating, Refrigeration and Air Conditioning Engineers Handbook of Fundamentals. This chapter covers calculating space cooling loads; general procedures; and simplified procedures for residential calculations.

g. Sewage. Consumption is usually measured in thousands of gallons (Kgal). Use a percentage of water consumption. Percentages used may vary from 70 to 90 depending on the type of facility and the local estimate of the amount of incoming water not reaching sewage system.

h. Fuel Oil. Usually measured in gallons (Gal), but may be measured in liters (L). Methods of delivery will determine if there are line losses and what percentage to use.

i. Ice. Consumption is usually measured in pounds (Lb). Always weigh for delivery.

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j. Garbage or Refuse Disposal. Consumption measured in the most accurate local method; number of pick-ups, tons, cubic yards, or number of containers.

k. Vending Machines. Use the Army and Air Force Exchange System (AAFES) figures referenced in Appendix B.

Chapter V - Rate Computations

5-1. Data Required. Rate computations are based on prior year cost data described in Chapter III for annual computation or notification of changes in cost by a supplier for an intermediate period or by calculating charges and MCA cost data for facilities in each type of service. If there have been no additions to the MCA base, the calculations for the prior year are acceptable.

5-2. Rate Calculations. Appendix C contains a suggested method of rate computation with format sheets for the various types of services. This method can be used for manual or computer preparation.

Chapter VI - Meter Reading.

6-1. Frequency. Monthly meter readings are preferred for purchasers of large quantities of utility services. Variations from monthly readings are acceptable for small quantities or meters located at remote sites.

6-2. Procedures. Careful and accurate adherence to manufacturer instructions or guidelines is required. Some meter readings must be multiplied by a correction factor, usually on the dial face.

6-3. Forms. Computer generated forms or meter reading books are used and retained for the official record. Completed forms and books should show as a minimum the following:

- a. Type of utility meter, identification number and location.
- b. Meter multiplier.
- c. Prior reading date and meter reading.
- d. Present reading date and meter reading.
- e. Number of days between readings and the consumption in that period.
- f. Average consumption per day between reading dates.
- g. Units (KWH, Cubic Feet, Gallons, etc).
- h. Remarks (damage to meter, suspected tampering, etc).
- h. Name of meter reader.

Chapter VII - Billing.

7.1 Preparation. The amount charged is determined by the amount of consumption as determined in Chapter IV, the rate class as prescribed in Appendix B, and rate calculation as determined by procedures in Appendix C. Bills are usually prepared monthly, but the billing period may be varied when monthly amounts do not justify such a frequency.

7-2. Adjustments. Billing adjustments are required when:

a. Significant changes to consumption occur in non-metered facilities, such as an increase or decrease in purchaser's operations or equipment, consumption amounts should be re-computed.

b. Whenever a utility supplier to the Army places a new rate into effect, the affected rates should be recalculated and billed according to the sales contract terms.

7-3. Annual Review. The Utilities Sales/Services Officer will:

a. Review annually the eligibility of each purchaser using the latest issues of Army Regulations referenced in notes to Appendix B.

b. Evaluate the need to recompute consumption quantity for non metered service.

c. Prepare new rates using format sheets in Appendix C.

Technical Note No. 420-41-1(Revision 1)
21 January 1992

APPENDIX B

CATEGORIES OF FACILITIES, ACTIVITIES AND INDIVIDUALS AND APPLICABLE RATE CLASSES FOR UTILITIES SERVICES

DIRECTORATE OF ARMY POWER PROCUREMENT
US ARMY ENGINEERING AND HOUSING SUPPORT CENTER
FORT BELVOIR, VIRGINIA 22060-5516

Categories of Facilities, Activities and Individuals
and Applicable Rate Classes for Utilities Services

Categories	Applicable Rate Classes			
	Without Charge	With Charge		
		Rate A	Rate B	LPR ¹
ARMY MWR Category A Category B Category D	X X	X ^{2&3}		
Commissaries		X ⁴		
Family Housing		X ⁵		
Other DOD Activities		X		
Federal Non-DOD Activities		X		
State & Local Government on Post			X	
PRIVATE ORGANIZATIONS (POs) ON POST Banks Credit Unions American National Red Cross United Services Organization United Seamen's Service Labor Organizations Assoc. of Superv. & Managers Civil Air Patrol Army Emergency Relief Other Type 1 and all Types 2 & 3 POs All other Lessees on Post	X ⁸ X ⁹ X ¹⁴		X ⁶ X ⁷ X ¹⁰ X ¹¹ X ¹² X ¹³ X ¹⁵ X ¹⁶	
Contractors: MCA, OMA, RDT&E			X ¹⁷	
Vending Machines (Not a Category)			X ¹⁸	
Electricity from Alternate Energy and Cogeneration			X	
OFF POST Schools and Colleges Commercial Business Title VII Housing Rental Quarters All other Off Post Customers				X X X X X

NOTES FOR APPENDIX B: (Referenced documents should be read for full context and meaning when their provisions apply.)

1. In all cases where Local Prevailing Rate (LPR) is prescribed as the applicable rate, compare Rate B to the LPR. If Rate B is higher than LPR, use Rate B (AR 420-41).

2. AR 215-1, The Administration of Army Morale, Welfare and Recreation Activities and Non-Appropriated Fund Instrumentalities, 10 October 1990, Issue Number 16, has made some exceptions in the areas of common support and common services.

a. Exception: Common Support. Paragraph 4-1. b. ... If the sum of all common support (communications, utilities, custodial and janitorial services, personnel and procurement services, accounting and other common types support) is less than \$2500 per year and does not warrant the expense of proration and billing there will be no charge.

b. Exception: Common Services. Appendix C of AR 215-1, paragraph 12.h. Common Services. Services of protective or sanitary nature normally supplied as a command function. Such services include: fire protection....; pest control; sewage disposal; trash and garbage removal; snow removal... Authorized (without charge) for all costs associated with protecting health and safety...

c. Appendix C of AR 215-1, Paragraph 7 - CONUS temporary guest facilities are not authorized free utilities. OCONUS is authorized free utilities.

d. For golf courses where water used for ground maintenance is supplied from:

(1) Excess water that is generated and/or stored for fire prevention and suppression purposes;

(2) Non-potable water and excess potable water that must be generated to maintain safe operating conditions of a water treatment facility; or

(3) Water from government owned wells that is not treated;

the applicable rate shall be the actual pumping costs rather than the standard rate outlined in AR 420-41. The sales agreement must be updated to reflect any special circumstances. Copy of written agreement or modifications thereto shall be provided to the corresponding Army Power Procurement Officer Representative. Clear documentation and detailed calculation procedure must accompany the requests for approval.

3. AR 210-25, Vending Facility Program for the Blind on Federal Property, establishes that the operation of cafeterias and snack bars by the blind on

Federal Property shall be subject to payment of utilities and telephone services to be reimbursed by the State licensing agency. The DOD Component will provide support and bill the State licensing agency.

4. AR 30-19, Army Commissary Store Operating Policies, and USC 10-2484. With charge in CONUS; without charge in Alaska, Hawaii, and outside the Continental United States.

5. Family Housing funded BMAR is excluded from rate calculations. Rate A is modified for Family Housing. See Appendix C, Family Housing Rate sheet.

6. AR210-135, Banks and Credit Unions on Army Installations.

CONUS-BANKS

2-4. Use of Space, Logistical Support, and Military Real Property.

a. (1) Nonself-sustaining"The Director of Finance and Accounting, OASA (FM) authorizes the degree of logistical support and classifies the bank as nonself-sustaining when the bank profit is below 7 percent of gross expenses for four consecutive quarters.

(2) Self-sustaining ... reimbursement will be required for support when profit and loss statements of the bank show a profit of 10 percent or more for four consecutive quarters.

OCONUS-BANKS

3-3. Logistical Support.

a. Overseas Military Bank Facilities (MBF) operated under contract.

(1) Installation or community commanders will provide logistical banking support. Such support normally includes- (g). Utilities, Custodial and janitorial services... "Utilities are defined as electricity, heat, water, sewage and garbage disposal."

7. AR210-135, Banks and Credit Unions on Army Installations.

CONUS

4-4. Logistical Support.

When available, janitorial services, utilities (such as air-conditioning, electricity, gas, water, and sewage) shall be furnished without charge. If the membership fails to meet 95% criteria (95% of members composed of military personnel or federal employees) then utility services must be reimbursed.

OCONUS

Section IV. Overseas Credit Unions.

4-18. b.... janitorial services, utilities (such as air-conditioning, electricity, gas, water, and sewage)... are furnished at no cost to the credit union occupying free space in a Government building. If Credit Union fails to meet 95% criteria (95% of members composed of military personnel or federal employees) then utility services must be reimbursed...

8. AR 930-5, American National Red Cross Service Program and Army Utilization.

3-3 Utilities Services. Utilities services will be furnished at Government expense in buildings owned by, or leased to, the Army which are occupied as office space by representatives of the Red Cross, and in buildings owned by the Red Cross on Government owned land, subject to such limitations may be prescribed by the appropriate military commander.

9. AR 930-1, Army Use of USO Services.

Section III. 9. ...may be granted limited logistical support according to AR 210-1, Chapter 4.

10. AR 700-83, Army Support of United Seamen's Service.

11. Federal Personnel Manual (FPM), Chapter 711. (For Labor organizations subject to Title 5, USC, chapter 71).

12. Civilian Personnel Regulation (CPR) 251 and AR 1-210.

13. AFR 46-6, Support for Civil Air Patrols.

14. AR 930-4, Army Emergency Relief.

15. AR 210-1, Private Organizations on Department of the Army Installation. Section III 4-10 Utilities. All POs will reimburse the installation for utilities except when not required ...

Installation commander may waive or reduce utility rates for nonprofit POs under provisions of AR 37-60. Paragraphs 9-6 and 9-8.

16. AR 420-41, Lessees of facilities used by lessees for private commercial purposes.

17. MCA, OMA, RDT&E Contractors: The contract document controls whether or not utilities are furnished without charge or with charge Rate A or Rate B).

Technical Note No. 420-41-1(Revision 1)
21 January 1992

For fixed-price construction, fixed-price dismantling, demolition, improvement contracts, look for clauses from Federal Acquisition Regulations 36.514 and 52.236-14. Clauses 52.236-14 a. "... paid for by the Contractor at prevailing rates charged to the Government or where produced by the Government, at reasonable rates determined by the contracting officer." This allows no mark up for O&M of the distribution system.

18. Vending machines, equipment and appliances connected to the installation system and operated for private gain. Rate charged depends on Purchaser category. For example an AAFES vending machine could be Category C at either Rate A for CONUS installations or without charge for OCONUS installations. The electrical consumption of typical vending machines is provided by the Energy Management Manual ESM-36-1, July 1983, published by the Headquarters Army and Air Force Exchange Service, Dallas, Texas 75222.

Technical Note No. 420-41-1(Revision 1)
21 January 1992

APPENDIX C

RATE CALCULATION FORMATS WITH INSTRUCTIONS FOR COMPLETION

DIRECTORATE OF ARMY POWER PROCUREMENT
US ARMY ENGINEERING AND HOUSING SUPPORT CENTER
FORT BELVOIR, VIRGINIA 22060-5516

GENERAL DIRECTIONS FOR COMPLETION OF FORMATS.

1. Original and one copy of the formats for each of the applicable services should be prepared. Include work sheets.
2. The formats may be revised to cover any unique circumstances at the Installation. Use the section titled "Explanation of any Variations" to explain the need for revision of format.
3. Include a brief explanation of any items experiencing a drastic change from the previous year's calculation. For example, a \$1.0 million dollar increase in the electric system capital cost should be explained in the section "Explanation of any Variations". A short note will be sufficient. Example: Item IV.1, Capital cost increased due to new substation.
4. Be sure to include a copy of the local prevailing rate. If none is available, indicate this in the item "Local Prevailing Rate".
5. Mid-year rate changes should be passed through to customers by submitting a new calculation for approval. The decision to calculate a new rate should be based on the impact of the supplier's rate change. As a general rule, the rate should be recalculated when the change in revenue is offset by the administrative cost of implementing the revised rate.
6. Suggestions to improve the formats are requested.

Format sheets are attached for:

PAGE NO.

Sales Rate Summary	C-3
Family Housing Rates	C-4
Electricity	C-6
Water	C-9
Sewage	C-13
Refuse Collected/Disposed	C-17
Natural Gas	C-19
LPG	C-23
Fuel Oil	C-25
Steam	C-27
Space Cooling (Per Square Foot)	C-30
Space Heating (Per Square Foot) alternate 1	C-32
Space Heating (Per Square Foot) alternate 2	C-34
Space Heating (Per MCF)	C-36
Space Heating (Per MBTU)	C-38
Space Heating Based on Coal Consumption	C-40
Space Heating Based on Wood Pellet Consumption	C-42

SALES RATE SUMMARY

Installation: _____

Date: _____

Current Rates for FY _____

Current Rates for FY _____

	A	H	B	A	H	B
Electric (\$/KWh)	_____	_____	_____	_____	_____	_____
Water (\$/KGal)	_____	_____	_____	_____	_____	_____
Sewage (\$/KGal)	_____	_____	_____	_____	_____	_____
Nat Gas (\$/Therm)						
Firm	_____	_____	_____	_____	_____	_____
Interruptible	_____	N/A	_____	_____	N/A	_____
Refuse (\$/CuYd)	_____	_____	_____	_____	_____	_____
LP Gas (\$/Gal)	_____	_____	_____	_____	_____	_____
#__Fuel Oil (\$/Gal)	_____	_____	_____	_____	_____	_____
Steam (\$/KLb)	_____	_____	_____	_____	_____	_____
Space Htg (\$/SF/Mo)	_____	_____	_____	_____	_____	_____
Space Htg (\$/MCF)	_____	_____	_____	_____	_____	_____
Space Htg (\$/MBTU)	_____	_____	_____	_____	_____	_____
Space Htg (\$/Ton)						
Using Coal	_____	_____	_____	_____	_____	_____
Space Htg (\$/Ton)						
Using Wood Pellet	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

The monthly Fuel Adjustment is added to Base Rates.

A = Rate A

B = Rate B

H = Family Housing Rate from 'Family Housing Rates' Sheet.

Prepared by: _____

FAMILY HOUSING RATES

Installation: _____ Period From: _____ to _____

Calculations for Fiscal Year: _____ Prepared By: _____

I. COST OF MAINTENANCE (SEE NOTE 1):

INSTRUCTIONS:

	ELEC	WATER	SEWAGE	NAT GAS	
1. Normal Maintenance	\$ _____	\$ _____	\$ _____	\$ _____	Input
2. Abnormal Maint.	\$ _____	\$ _____	\$ _____	\$ _____	Input
3. Abnormal Maint. Amortization	\$ _____	\$ _____	\$ _____	\$ _____	I.2 / 5
4. Abnormal Maint. from Previous Years	\$ _____	\$ _____	\$ _____	\$ _____	Input
5. Reimbursed Maint. (See Note 2)	\$ _____	\$ _____	\$ _____	\$ _____	Input
6. Total Maintenance	\$ _____	\$ _____	\$ _____	\$ _____	I.1+I.3+I.4-I.5
7. Quantity Consumed	\$ _____	\$ _____	\$ _____	\$ _____	SEE NOTE 3
8. Unit Cost of Maintenance	\$ _____ \$ per KWhr	\$ _____ \$ per KGal	\$ _____ \$ per KGal	\$ _____ \$ per Therm	I.6 / I.7

II. COST OF OPERATION/GENERATION/PURCHASE:

	Elec \$/KWh	Water \$/KGal	Sewage \$/KGal	Nat Gas \$/Therm	
1. Unit Cost	_____	_____	_____	_____	SEE NOTE 4

III. UNIT RATE FOR FAMILY HOUSING = RATE H:

Unit Costs	Elec* \$ per KWh	Water \$ per KGal	Sewage \$ per KGal	Nat Gas \$ per Therm	
1. Operation	_____	_____	_____	_____	II.1
2. Maintenance	_____	_____	_____	_____	I.8
3. Rate H	_____	_____	_____	_____	III.1+III.2

NOTES:

1. The procedures for calculation of the systems maintenance to be charged family housing are the same as those used in all other calculations, **EXCEPT THE COST OF THE BMR PROJECTS ARE TO BE SUBTRACTED OUT.** This applies to both normal and abnormal maintenance.

2. This line refers strictly to MAINTENANCE reimbursements.

3. Extract the following items from the previous calculations and insert on appropriate lines.

Electrical	= I.4 from Electrical Calculations
Water	= I.6 from Water Calculations
Sewage	= I.5 from Sewage Calculations
Natural Gas	= I.3 from Natural Gas Calculations

4. Extract the following items from the previous calculations and insert on the appropriate lines.

Electrical	= II.6 from Electrical Calculations
Water	= II.7 from Water Calculations
Sewage	= II.7 from Sewage Calculations
Natural Gas	= II.1.d from Natural Gas Calculations

EXPLANATION OF VARIANCES:

* The fuel adjustment must be added to Rate H each month in order to obtain the final billing rate.

ELECTRICITY

Initial [] Within FY Rate Change []

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared By: _____

INSTRUCTIONS:

I. CONSUMPTION:

1. Purchase:

a. Actual Purchased Quantity	_____	KWh		Input
b. Estimated New Requirement	_____	KWh		Input
c. Total Purchase Quantity	_____	KWh		I.1.a + I.1.b

2. Generation:

a. Actual Generated Quantity	_____	KWh		Input
b. Estimated New Requirement	_____	KWh		Input
c. Total Generation Quantity	_____	KWh		I.2.a + I.2.b

3. Estimated Total Usage

_____	KWh		I.1.c + I.2.c
-------	-----	--	---------------

4. Percent Losses

_____	%		Input (NOTE 1)
-------	---	--	----------------

5. Losses

_____	KWh		I.3 X I.4 / 100
-------	-----	--	-----------------

6. Estimated Total Consumption

_____	KWh		I.3 - I.5
-------	-----	--	-----------

II. COST OF OPERATION:

1. Purchase Cost:

a. Initial Submission:

(1) Actual Purchased Cost	\$ _____		Input
(2) Estimated New Requirement Cost	\$ _____		I.1.b X II.1.a(1) / I.1.a
(3) Total Purchase Cost	\$ _____		II.1.a(1) + II.1.a(2)

b. Within FY Rate Change Submission:

(1) Rate Change Effective Date	_____		Input
(2) New Rate (Recalculated) Purchase Cost	\$ _____		Input

ELECTRICITY (CONT' D)

			INSTRUCTIONS:
2. Generation Cost:			
a. Actual Generated Cost	\$ _____		Input
b. Estimated New Requirement Cost	\$ _____		$I.2.b \times [II.2.a / I.2.a]$
c. Total Generation Cost	\$ _____		$II.2.a + II.2.b$
3. Estimated Total Cost of Operation	\$ _____		$[II.1.a(3) \text{ or } II.1.b(2)] +$ $II.2.c$ [Use II.1.a(3) if II.1.b(2) = 0, otherwise use II.1.b(2)]
4. Unit Cost of Operation	\$ _____	per KWh	$II.3 / I.6$
III. COST OF MAINTENANCE:			
1. Normal Maintenance Cost	\$ _____		Input
2. Estimated New Requirement Maintenance Cost	\$ _____		$[I.1.b + I.2.b] \times III.1 /$ $[I.1.a + I.2.a]$
3. Abnormal Maintenance Cost	\$ _____		Input
4. Abnormal Maintenance Cost Amortization	\$ _____		$III.3 / 5$ (NOTE 2)
5. Abnormal Maintenance Cost Amortization Carry-over from Previous Years	\$ _____		Input
6. Estimated Total Cost of Maintenance	\$ _____		$III.1 + III.2 + III.4 +$ $III.5$
7. Unit Cost of Maintenance	\$ _____	per KWh	$III.6 / I.6$
IV. COST OF CAPITAL:			
1. Present Acquisition Cost (From Real Property Record)	\$ _____		Input
2. Estimated New Facilities Acquisition Cost	\$ _____		Input
3. Annual Charge	\$ _____		$[IV.1 + IV.2] \times 0.1$ (NOTE 3)
4. Estimated Annual Peak Demand in KW	_____	KW	Input (NOTE 4)
5. System Capacity	_____	KWh per year	$IV.4 \times 24 \times 365$
6. Unit Cost of Capital	\$ _____	per KWh	$IV.3 / IV.5$

ELECTRICITY (CONT' D)

			INSTRUCTIONS:
V. RATE SUMMARY:			
1. Unit Cost of Operation	\$ _____	per KWh	II.4
2. Unit Cost of Maintenance	\$ _____	per KWh	III.7
3. Rate A	\$ _____	per KWh	V.1 + V.2
4. Rate A	\$ _____	per KWh	V.3
5. Unit Cost of Capital	\$ _____	per KWh	IV.6
6. Subtotal	\$ _____	per KWh	V.4 + V.5
7. Administrative Overhead	\$ _____	per KWh	V.6 X 0.03
8. Rate B	\$ _____	per KWh	V.6 + V.7
9. Rate for Pumping (SEE NOTE 5)	\$ _____	per KWh	V.3 (RATE A)

NOTES:

1. The estimated loss percentage may be prorated at 1% for substation, 2% for lines, and 2% for distribution transformers, for a system loss factor of 5%. These percentages may be revised to more closely reflect your system.
2. High cost nonrecurring maintenance costs during the year could result in abnormal variation in the sales rate. This may be avoided by spreading the cost over a period of five years. One fifth of the cost is included each year.
3. The 10% factor in calculating the annual capital charge is mandatory.
4. When the annual peak demand is appreciably less than the system capacity (50%), you should consider using the substation capacity to determine the system capacity. Any such variation should be explained as should any changes in the system cost obtained from the property records.
5. This rate is used in later calculations for determining the cost of electricity for pumping.

DISCUSSIONS:

Items II.1(a) & II.1(b) must be completed when the supplier implements a rate change during the 12 months period which these calculations are applicable.

New requirement operation and maintenance costs are based on the operation and maintenance of existing facilities. If new facilities are added to fulfill the installation requirement, then, the estimated costs of operating and maintaining the new facilities must be added to the formulae.

EXPLANATION OF ANY VARIATIONS:

LOCAL PREVAILING RATE: Attach one copy when changes have occurred during the base period.

WATER

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared By: _____

I. QUANTITY CONSUMED:

INSTRUCTIONS:

1. Quantity Purchased (From Bills)	_____	Kgal		Input
2. Quantity Produced	_____	KGal		Input
3. Subtotal	_____	KGal		I.1 + I.2
4. System Loss % (SEE NOTE 1)	_____	%		Input
5. Losses	_____	KGal		I.3 X I.4 / 100
6. Quantity Used	_____	KGal		I.3 - I.5

II. COST OF PURCHASE/PRODUCTION:

1. Purchase Cost (Actual Bills)	\$ _____		Input
---------------------------------	----------	--	-------

Items 2 and 3 must be completed when a rate change has occurred during the 12 months covered by these calculations. Calculate what the monthly billings would have been at the current rate and enter the annual cost in Item 3. Attach a copy of the current rate schedule and your work sheet.

2. Date of last Rate change	_____		Input
3. Recalculated Purchase Cost	\$ _____		Input
4. Cost of Production (SEE NOTE 2)	\$ _____		Input
5. Power for Pumping	\$ _____		III.3
6. Total Cost Purchase/Production	\$ _____		(II.1 or II.3) + II.4 + II.5 (Use II.1 if II.3 = 0, otherwise use II.3)
7. Unit Cost for Purchase/Production	\$ _____		II.6 / I.6

III. COST OF POWER FOR PUMPING:

INSTRUCTIONS:

1. Electric Consumption			
a. Metered	_____	KW hr	Input
b. Unmetered	_____	KW hr	Total of III.4 for all pumps
c. Total	_____	KW hr	III.1.a + III.1.b
2. Pumping Rate	\$ _____	per KW hr	V.II from Electric Calculations.
3. Cost of Pumping	\$ _____		III.c X III.2

WATER (CONT'D)

4. Estimated Usage for Unmetered Pumps:

INSTRUCTIONS:

Pump No. ____/Location ____/____	____/____	____/____	____/____		
a. Average Pumping Head	____ ft	____ ft	____ ft		Input
b. Pumping Rate	____ Gpm	____ Gpm	____ Gpm		Input
c. Annual Hours of Use	____ Hrs	____ Hrs	____ Hrs		Input
d. Total KWh Consumed	____ KWh	____ KWh	____ KWh		III.4.a X III.4.b X III.4.c X 0.00029
Pump No. ____/Location ____/____	____/____	____/____	____/____		
a. Average Pumping Head	____ ft	____ ft	____ ft		Input
b. Pumping Rate	____ Gpm	____ Gpm	____ Gpm		Input
c. Annual Hours of Use	____ Hrs	____ Hrs	____ Hrs		Input
d. Total KWh Consumed	____ KWh	____ KWh	____ KWh		III.4.a X III.4.b X III.4.c X 0.00029
Pump No. ____/Location ____/____	____/____	____/____	____/____		
a. Average Pumping Head	____ ft	____ ft	____ ft		Input
b. Pumping Rate	____ Gpm	____ Gpm	____ Gpm		Input
c. Annual Hours of Use	____ Hrs	____ Hrs	____ Hrs		Input
d. Total KWh Consumed	____ KWh	____ KWh	____ KWh		III.4.a X III.4.b X III.4.c X 0.00029
Pump No. ____/Location ____/____	____/____	____/____	____/____		
a. Average Pumping Head	____ ft	____ ft	____ ft		Input
b. Pumping Rate	____ Gpm	____ Gpm	____ Gpm		Input
c. Annual Hours of Use	____ Hrs	____ Hrs	____ Hrs		Input
d. Total KWh Consumed	____ KWh	____ KWh	____ KWh		III.4.a X III.4.b X III.4.c X 0.00029
Pump No. ____/Location ____/____	____/____	____/____	____/____		
a. Average Pumping Head	____ ft	____ ft	____ ft		Input
b. Pumping Rate	____ Gpm	____ Gpm	____ Gpm		Input
c. Annual Hours of Use	____ Hrs	____ Hrs	____ Hrs		Input
d. Total KWh Consumed	____ KWh	____ KWh	____ KWh		III.4.a X III.4.b X III.4.c X 0.00029
Pump No. ____/Location ____/____	____/____	____/____	____/____		
a. Average Pumping Head	____ ft	____ ft	____ ft		Input
b. Pumping Rate	____ Gpm	____ Gpm	____ Gpm		Input
c. Annual Hours of Use	____ Hrs	____ Hrs	____ Hrs		Input
d. Total KWh Consumed	____ KWh	____ KWh	____ KWh		III.4.a X III.4.b X III.4.c X 0.00029

Note:

Efficiency = 65% HP = 0.746 Kw

KWh = (Pumping Rate X Avg Pumping Head X Annual Hours of use X 0.746) divided by (3960 X 0.65)
= (Pumping Rate X Avg Pumping Head X Annual Hours of use) X 0.00029

WATER (CONT'D)

IV. COST OF MAINTENANCE:			INSTRUCTIONS:
1. Normal Maintenance	\$ _____		Input
2. Abnormal Maintenance (SEE NOTE 3)	\$ _____		Input
3. Abnormal Amortization	\$ _____		IV.2 / 5
4. Amortization Maintenance Carry-over from previous years.	\$ _____		Input
5. Reimbursed Maintenance	\$ _____		Input
6. Net Maintenance Cost	\$ _____		IV.1 + IV.3 + IV.4 - IV.5
7. Unit Cost Maintenance	\$ _____	Per KGal	IV.6 / I.6
V. COST OF CAPITAL:			
1. Acquisition Cost (From Real Property Record)	\$ _____		Input
2. Annual Charge (SEE NOTE 4)	\$ _____		V.1 X 0.1
3. System Capacity	_____	Gal. per day	Input
4. Annual Capacity	_____	KGal per yr	V.3 X 365 / 1,000
5. Unit Cost of Capital	\$ _____	per KGal	V.2 / V.4
VI. RATE SUMMARY:			
1. Unit Cost of Purchase/Production	\$ _____	per KGal	II.7
2. Unit Cost of Maintenance	\$ _____	per KGal	IV.7
3. Rate A	\$ _____	per KGal	VI.1 + VI.2
4. Rate A.	\$ _____	per KGal	VI.3
5. Unit Cost of Capital	\$ _____	per KGal	V.5
6. Subtotal	\$ _____	per KGal	VI.4 + VI.5
7. Administrative Overhead	\$ _____	per KGal	VI.6 X 0.03
8. Rate B.	\$ _____	per KGal	VI.6 + VI.7

WATER (CONT'D)

NOTES:

1. Normal losses may be estimated at 5%. This percentage may be revised to more closely reflect your system.
2. Include all labor, material, and supply costs (excluding electricity) used in operating the water facilities (wells, treatment plants, etc.).
3. High cost nonrecurring maintenance costs during the year could result in abnormal variation in the sales rate. This may be avoided by spreading the cost over a period of five years. One fifth of the cost is included each year. Use a 25% increase in Rate A as a guide in making decisions to amortize.
4. The 10% factor in calculating the annual capital charge is mandatory.

EXPLANATION OF ANY VARIATIONS:

LOCAL PREVAILING RATE: Attach one copy when changes have occurred during the base period.

SEWAGE

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared By: _____

I. QUANTITY GENERATED: (SEE NOTE 1)

| **INSTRUCTIONS:**

1. Total Water Used	_____	KGal	I.6 from Water Calculations
2. Sewage as % of water	_____	KGal	Input
3. Actual Generation	_____	KGal	Input
4. Infiltration and Inflow	_____	KGal	Input
5. Quantity Used	_____	KGal	I.1 X I.2 / 100 or I.3 - I.4

II. COST OF PURCHASE/TREATMENT:

1. Purchase Cost (Actual Bills)	\$ _____	Input
---------------------------------	----------	-------

Items 2 and 3 must be completed when a rate change has occurred during the 12 months covered by these calculations. Calculate what the monthly billings would have been at the current rate and enter the annual cost in Item 3. Attach a copy of the current rate schedule and your work sheet.

2. Date of last Rate change	_____	Input
3. Recalculated Purchase Cost	\$ _____	Input
4. Cost of Treatment (SEE NOTE 2)	\$ _____	Input
5. Power for Pumping	\$ _____	III.3
6. Total Cost Purchase/Treatment	\$ _____	(II.1 or II.3) + II.4 + II.5
		(Use II.1 if II.3 = 0,
		otherwise use II.3)
7. Unit Cost for Purchase/Production	\$ _____ Per KGal	II.6 / I.5

III. COST OF POWER FOR PUMPING:

1. Electric Consumption			
a. Metered	_____	KW hr	Input
b. Unmetered	_____	KW hr	Total of III.4 for all pumps
c. Total	_____	KW hr	III.1.a + III.1.b
2. Pumping Rate	\$ _____	per KW hr	V.II from Electric
			Calculations.
3. Cost of Pumping	\$ _____		III.c X III.2

SEWAGE (CONT'D)

4. Estimated Usage for Unmetered Pumps:

INSTRUCTIONS:

Pump No. ____/Location ____/____	____/____	____/____	____/____	
a. Average Pumping Head	____ ft	____ ft	____ ft	Input
b. Pumping Rate	____ Gpm	____ Gpm	____ Gpm	Input
c. Annual Hours of Use	____ Hrs	____ Hrs	____ Hrs	Input
d. Total KWh Consumed	____ KWh	____ KWh	____ KWh	III.4.a X III.4.b X III.4.c X 0.00029
Pump No. ____/Location ____/____	____/____	____/____	____/____	
a. Average Pumping Head	____ ft	____ ft	____ ft	Input
b. Pumping Rate	____ Gpm	____ Gpm	____ Gpm	Input
c. Annual Hours of Use	____ Hrs	____ Hrs	____ Hrs	Input
d. Total KWh Consumed	____ KWh	____ KWh	____ KWh	III.4.a X III.4.b X III.4.c X 0.00029
Pump No. ____/Location ____/____	____/____	____/____	____/____	
a. Average Pumping Head	____ ft	____ ft	____ ft	Input
b. Pumping Rate	____ Gpm	____ Gpm	____ Gpm	Input
c. Annual Hours of Use	____ Hrs	____ Hrs	____ Hrs	Input
d. Total KWh Consumed	____ KWh	____ KWh	____ KWh	III.4.a X III.4.b X III.4.c X 0.00029
Pump No. ____/Location ____/____	____/____	____/____	____/____	
a. Average Pumping Head	____ ft	____ ft	____ ft	Input
b. Pumping Rate	____ Gpm	____ Gpm	____ Gpm	Input
c. Annual Hours of Use	____ Hrs	____ Hrs	____ Hrs	Input
d. Total KWh Consumed	____ KWh	____ KWh	____ KWh	III.4.a X III.4.b X III.4.c X 0.00029
Pump No. ____/Location ____/____	____/____	____/____	____/____	
a. Average Pumping Head	____ ft	____ ft	____ ft	Input
b. Pumping Rate	____ Gpm	____ Gpm	____ Gpm	Input
c. Annual Hours of Use	____ Hrs	____ Hrs	____ Hrs	Input
d. Total KWh Consumed	____ KWh	____ KWh	____ KWh	III.4.a X III.4.b X III.4.c X 0.00029

Note:

Efficiency = 65% HP = 0.746 Kw

KWh = (Pumping Rate X Avg Pumping Head X Annual Hours of use X 0.746) divided by (3960 X 0.65)
= (Pumping Rate X Avg Pumping Head X Annual Hours of use) X 0.00029

SEWAGE (CONT'D)

IV. COST OF MAINTENANCE:			INSTRUCTIONS:
1. Normal Maintenance	\$ _____		Input
2. Abnormal Maintenance (SEE NOTE 3)	\$ _____		Input
3. Abnormal Amortization	\$ _____		IV.2 / 5
4. Amortization Maintenance Carry-over from previous years.	\$ _____		Input
5. Reimbursed Maintenance	\$ _____		Input
6. Net Maintenance Cost	\$ _____		IV.1 + IV.3 + IV.4 - IV.5
7. Unit Cost Maintenance	\$ _____	Per KGal	IV.6 / I.5
V. COST OF CAPITAL:			
1. Acquisition Cost (From Real Property Record)	\$ _____		Input
2. Annual Charge (SEE NOTE 4)	\$ _____		V.1 X 0.1
3. System Capacity	_____	Gal. per day	Input
4. Annual Capacity	_____	KGal per yr	V.3 X 365 / 1,000
5. Unit Cost of Capital	\$ _____	per KGal	V.2 / V.4
VI. RATE SUMMARY:			
1. Unit Cost of Purchase/Production	\$ _____	per KGal	II.7
2. Unit Cost of Maintenance	\$ _____	per KGal	IV.7
3. Rate A	\$ _____	per KGal	VI.1 + VI.2
4. Rate A.	\$ _____	per KGal	VI.3
5. Unit Cost of Capital	\$ _____	per KGal	V.5
6. Subtotal	\$ _____	per KGal	VI.4 + VI.5
7. Administrative Overhead	\$ _____	per KGal	VI.6 X 0.03
8. Rate B.	\$ _____	per KGal	VI.6 + VI.7

SEWAGE (CONT'D)

NOTES:

1. The actual sewage volume generated less the infiltration estimates should be used if known. Otherwise an estimate based on percent of the total quantity of water may be used. Normally this is 70%, however this may be revised to more closely reflect your system.
2. Include all labor, material, and supply costs (excluding electricity) used in operating the sewage treatment, facilities, treatment plan, etc.).
3. High cost nonrecurring maintenance costs during the year could result in abnormal variation in the sales rate. This may be avoided by spreading the cost over a period of five years. One fifth of the cost is included each year. Use a 25% increase in Rate A as a guide in making decisions to amortize.
4. The 10% factor in calculating the annual capital charge is mandatory.

EXPLANATION OF ANY VARIATIONS:

LOCAL PREVAILING RATE: Attach one copy when changes have occurred during the base period.

REFUSE COLLECTION/DISPOSAL

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared By: _____

I. QUANTITY COLLECTED/DISPOSED:

INSTRUCTIONS:

	Collection	Disposal	
1. DEH Personnel	_____ CuYd	_____ CuYd	Input
2. Contract	_____ CuYd	_____ CuYd	Input
3. Troop/Self-Help (SEE NOTE 1)	_____ CuYd	_____ CuYd	Input
4. Totals	_____ CuYd	_____ CuYd	I.1 + I.2 + I.3

II. COST OF COLLECTION/DISPOSAL:

	Collection	Disposal	
1. Operations & Maint.	\$ _____	\$ _____	Input
2. Labor/Supervision	\$ _____	\$ _____	Input
3. Equip. Rental (SEE NOTE 2)	\$ _____	\$ _____	Input
4. Contract	\$ _____	\$ _____	Input
5. Other	\$ _____	\$ _____	Input
6. Subtotal	\$ _____	\$ _____	II.1 + II.2 + II.3 + II.4 + II.5
7. Maintenance Reimbursement	\$ _____	\$ _____	Input
8. Total Cost	\$ _____	\$ _____	II.6 - II.7
9. Unit Cost Coll/Disp	\$ _____	\$ _____	II.8 / I.4

III. COST OF CAPITAL: (SEE NOTE 3)

	Collection	Disposal	
1. Acquisition Cost	\$ _____	\$ _____	Input
2. Annual Charge	\$ _____	\$ _____	III.1 X 0.1
3. System Capacity	_____ Cy/Day	_____ Cy/Day	Input
4. Annual System Capacity	_____ Cy/Yr	_____ Cy/Yr	III.3 X 365
5. Unit Cost of Capital	\$ _____ /CuYd	\$ _____ /CuYd	III.2 / III.4

REFUSE COLLECTION/DISPOSAL (CONT'D)

V. RATE SUMMARY:			INSTRUCTIONS
	Collection	Disposal	
1. Rate A	\$ _____/CuYd	\$ _____/CuYd	II.9
2. Rate A	\$ _____/CuYd	\$ _____/CuYd	II.9
3. Unit Cost of Capital	\$ _____/CuYd	\$ _____/CuYd	III.5
4. Subtotal	\$ _____/CuYd	\$ _____/CuYd	IV.2 + IV.3
5. Administration/Overhead	\$ _____/CuYd	\$ _____/CuYd	IV.4 X 0.03
6. Rate B	\$ _____/CuYd	\$ _____/CuYd	IV.4 + IV.5
7. Combined Rates (Coll & Disp)			
8. Rate A	\$ _____	per CuYd	IV.1 (Coll) + IV.1 (Disp)
9. Rate B	\$ _____	per CuYd	IV.6 (Coll) + IV.6 (Disp)

NOTES:

1. The cost of refuse collections by troops and self help personnel is not charged to the DEH. Disposal is normally accomplished by the DEH or by contract. The quantity should be included on this disposal line provided it is not included in either line 1 or 2.
2. Mobile equipment rental costs are determined from Tables 2-1 and 2-2 of AR 415-35. Add the unit costs of equipment maintenance and operation to the unit cost of depreciation and multiply by the number of operating hours. Collection equipment includes trash trucks and pick-up; disposal equipment includes the dozer and shovel at the landfill.
3. Acquisition cost includes the costs of collection containers, pads, sanitary landfill facilities, etc., but excludes mobile equipment which is covered by the equipment entry. The 10% factor in calculating the annual capital charge is mandatory.

EXPLANATION OF ANY VARIATIONS:

LOCAL PREVAILING RATE: Attach one copy when changes have occurred during the base period.

NATURAL GAS

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared by: _____

I. QUANTITY CONSUMED:

INSTRUCTIONS

- | | | | |
|-------------------------------------|-------|--------------|------------------------------|
| 1. Firm | | | |
| a. Quantity Purchased (From Bills) | _____ | Therms | Input (SEE NOTE 1) |
| b. Percent Losses (SEE NOTE 2) | _____ | % | Input |
| c. Losses | _____ | Therms | $I.1.a \times I.1.b / 100$ |
| d. Quantity Used | _____ | Therms | $I.1.a \text{ minus } I.1.c$ |
| | | | |
| 2. Interruptible | | | |
| a. Quantity (from Bills) | _____ | Therms | Input (SEE NOTE 1) |
| b. Percent Losses (SEE NOTE 2) | _____ | % | Input |
| c. Losses | _____ | Therms | $I.2.a \times I.2.b / 100$ |
| d. Quantity Used | _____ | Therms | $I.2.a \text{ minus } I.2.c$ |
| | | | |
| 3. Total Gas (Firm + Interruptible) | _____ | Therms | $I.1.d + I.2.d$ |
| 4. Average BTU Content | _____ | BTU per CuFt | Input |
| | | | |

II. COST OF PURCHASE:

Items 1b & c and 2b & c must be completed when a rate change has occurred during the 12 months covered by these calculations. Calculate what the monthly billings would have been at the current rate and enter the annual cost in item c. Attach a copy of the current rate schedule and your work sheet.

- | | | | |
|---------------------------------|----------|-----------|--------------------------------------|
| 1. Firm | | | |
| a. Purchase Cost (Actual Bills) | \$ _____ | | Input |
| | | | |
| b. Date of Last Rate Change | _____ | | Input |
| c. Recalculated Cost | \$ _____ | | Input |
| | | | |
| d. Unit Cost of Purchase (Firm) | \$ _____ | Per Therm | $II.1.a \text{ or } II.1.c / I.1.d.$ |
| | | | Use II.1.a if $II.1.c = 0$, |
| | | | otherwise use II.1.c |

NATURAL GAS (CONT'D)

		INSTRUCTIONS
2. Interruptible		
a. Purchase Cost (Actual Bills)	\$ _____	
b. Date of Last Rate Change	_____	Input
c. Recalculated Cost	\$ _____	Input
d. Unit Cost of Purchase (Interr.)	\$ _____ per Therm	II.2.a or II.2.c /I.2.d. Use II.2.a if II.2.c = 0, otherwise use II.2.c
III. COST OF MAINTENANCE:		
1. Normal Maintenance	\$ _____	Input
2. Abnormal Maintenance (SEE NOTE 3)	\$ _____	Input
3. Abnormal Amortization	\$ _____	III.2 / 5
4. Amortization Maintenance Carry-over from previous years	\$ _____	Input
5. Reimbursed Maintenance	\$ _____	Input
6. Net Maintenance Cost	\$ _____	III.1 + III.3 + III.4 - III.5
7. Unit Cost Maintenance	\$ _____ Per Therm	III.6 / I.3
IV. COST OF CAPITAL:		
1. Acquisition Cost (From Real Property Record)	\$ _____	Input
2. Annual Charge (SEE NOTE 4)	\$ _____	IV.1 X 0.1
3. Daily Peak	_____ Therms	Input
4. Systems Capacity (SEE NOTE 5)	_____ Therms	IV.3 X 365
5. Unit Cost of Capital	\$ _____ Per Therm	IV.2 / IV.4

NATURAL GAS (CONT'D)

			INSTRUCTIONS
V. RATE SUMMARY:			
1. Firm			
a. Unit Cost of Purchase	\$ _____ Per Therm		II.1.d
b. Unit Cost of Maintenance	\$ _____ Per Therm		III.7
c. Rate A (Firm)	\$ _____ Per Therm		V.1.a + V.1.b
d. Rate A	\$ _____ Per Therm		V.1.c
e. Unit Cost of Capital	\$ _____ Per Therm		IV.5
f. Subtotal	\$ _____ Per Therm		V.1.d + V.1.e
g. Administrative Overhead	\$ _____ Per Therm		V.1.f X 0.03
h. Rate B (Firm)	\$ _____ Per Therm		V.1.f + V.1.g
2. Interruptible			
a. Unit Cost of Purchase	\$ _____ Per Therm		II.2.d
b. Unit Cost of Maintenance	\$ _____ Per Therm		III.7
c. Rate A (Interruptible)	\$ _____ Per Therm		V.2.a + V.2.b
d. Rate A	\$ _____ Per Therm		V.2.c
e. Unit Cost of Capital	\$ _____ Per Therm		IV.5
f. Subtotal	\$ _____ Per Therm		V.2.d + V.2.e
g. Administrative and Overhead	\$ _____ Per Therm		V.2 X 0.03
h. Rate B (Interruptible)	\$ _____ Per Therm		V.2.f + V.2.g

NOTES:

1. Gas may be measured in KCF (thousand cubic feet), MBTU (million British Thermal Units), or Therms (100,000 BTUs). Conversion factors are as follows:

- BTU factor = BTU content of 1 cu. ft. of gas divided by 1,000 (Use when the heat contents of gas is less than 980 or more than 1020 BTUs).
- Billing MBTUs = KCF X MBTU factor.
- Therms = MBTU X 10 or KCF X MBTU factor X 10.

NATURAL GAS (CONT'D)

2. Normal losses may be estimated at 5 percent. This percentage may be revised to more closely reflect your system.
3. High cost non-recurring maintenance during the year could result in an abnormal variation in the sales rate. This may be avoided by spreading the cost over a period of five years. One fifth of the cost is included each year. Use 25% increase in Rate A as a guide in making decisions to amortize.
4. The 10% factor in calculating the annual capital charge is mandatory.
5. The system capacity may be determined by multiplying the annual peak daily demand by the number of days in a year. Where current peak has dropped considerably, the historical peak of the past five years may be used.

EXPLANATION OF ANY VARIATIONS:

LOCAL PREVAILING RATE: Attach one copy when changes have occurred during the base period.

LIQUIFIED PETROLEUM GAS (LPG)

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared by: _____

I. QUANTITY CONSUMED:

INSTRUCTIONS

- | | | |
|------------------------------------|--------------------|-----------------|
| 1. Quantity Purchased (From Bills) | _____ Gallons | Input |
| 2. Percent Losses (SEE NOTE 1) | _____ % | Input |
| 3. Losses | _____ Gallons | I.1 X I.2 / 100 |
| 4. Quantity Used | _____ Gallons | I.1 minus I.3 |
| 5. Average BTU Content | _____ BTU per Gal. | Input |

II. COST OF PURCHASE:

- | | | |
|---------------------------------|----------|-------|
| 1. Purchase Cost (Actual Bills) | \$ _____ | Input |
|---------------------------------|----------|-------|

Items 2 and 3 must be completed when a rate change has occurred during the 12 months covered by these calculations. Calculate what the monthly billings would have been at the current rate and enter the annual cost in Item 3. Attach a copy of the current rate schedule and your work sheets.

- | | | |
|---------------------------------------|---------------------|--|
| 2. Date of Last Rate Change | _____ | Input |
| 3. Recalculated Cost | \$ _____ | Input |
| 4. Cost of Operating On-Post Facility | \$ _____ | Input |
| 5. Total Cost of Purchase/Operation | \$ _____ | (II.1 or II.3) + II.4
 Use II.1 if II.3 = 0,
 Otherwise use II.3 |
| 6. Unit Cost of Purchase | \$ _____ per Gallon | II.5 / I.4 |

III. COST OF MAINTENANCE:

- | | | |
|---|----------|-------------------------------|
| 1. Normal Maintenance | \$ _____ | Input |
| 2. Abnormal Maintenance (SEE NOTE 2) | \$ _____ | Input |
| 3. Abnormal Amortization | \$ _____ | III.2 / 5 |
| 4. Amortization Carry-over from
previous years | \$ _____ | Input |
| 5. Reimbursed Maintenance | \$ _____ | Input |
| 6. Net Maintenance Cost | \$ _____ | III.1 + III.3 + III.4 - III.5 |
| 7. Unit Cost of Maintenance | \$ _____ | III.6 / I.4 |

LPG (CONT'D)

IV. COST OF CAPITAL:		INSTRUCTIONS
1. Acquisition Cost		
(From Real Property Rec.)	\$ _____	Input
2. Annual Charge (SEE NOTE 3)	\$ _____	IV.1 X 0.1
3. Systems Capacity	_____ Gallons	Input
4. Unit Cost of Capital	\$ _____ Per Gallon	IV.2 / IV.3
V. RATE SUMMARY:		
1. Unit Cost of Purchase	\$ _____ Per gallon	II.6
2. Unit Cost of Maintenance	\$ _____ Per Gallon	III.7
3. Rate A	\$ _____ Per Gallon	V.1 + V.2
4. Rate A	\$ _____ Per Gallon	V.3
5. Unit Cost of Capital	\$ _____ Per Gallon	IV.4
6. Subtotal	\$ _____ Per Gallon	V.4 + V.5
7. Administrative Overhead	\$ _____ Per Gallon	V.6 X 0.03
8. Rate B.	\$ _____ Per Gallon	V.6 + V.7

NOTES:

1. This percentage should reflect your system losses.
2. A high cost nonrecurring maintenance during the year could result in an abnormal variation in the sales rate. This may be avoided by spreading the cost over a period of five years. One fifth of the cost is included each year. Use a 25% increase in Rate A as a guide in making decisions to amortize.
3. The 10% factor in calculating the annual capital charge is mandatory.

EXPLANATION OF ANY VARIATIONS:

LOCAL PREVAILING RATE: Attach one copy when changes have occurred during the base period.

NO. ____ FUEL OIL

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared by: _____

I. QUANTITY CONSUMED:

INSTRUCTIONS

- | | | |
|------------------------------------|--------------------|-----------------|
| 1. Quantity Purchased (From Bills) | _____ Gallons | Input |
| 2. Percent Losses (SEE NOTE 1) | _____ % | Input |
| 3. Losses | _____ Gallons | I.1 X I.2 / 100 |
| 4. Quantity Used | _____ Gallons | I.1 minus I.3 |
| 5. Average BTU Content | _____ BTU per Gal. | Input |

II. COST OF PURCHASE:

- | | | |
|---------------------------------|----------|-------|
| 1. Purchase Cost (Actual Bills) | \$ _____ | Input |
|---------------------------------|----------|-------|

Items 2 and 3 must be completed when a rate change has occurred during the 12 months covered by these calculations. Calculate what the monthly billings would have been at the current rate and enter the annual cost in Item 3. Attach a copy of the current rate schedule and your work sheets.

- | | | |
|---------------------------------------|---------------------|--|
| 2. Date of Last Rate Change | _____ | Input |
| 3. Recalculated Cost | \$ _____ | Input |
| 4. Cost of Operating On-Post Facility | \$ _____ | Input |
| 5. Total Cost of Purchase/Operation | \$ _____ | (II.1 or II.3) + II.4
 Use II.1 if II.3 = 0,
 Otherwise use II.3 |
| 6. Unit Cost of Purchase | \$ _____ per Gallon | II.5 / I.4 |

III. COST OF MAINTENANCE:

- | | | |
|---|---------------------|-------------------------------|
| 1. Normal Maintenance | \$ _____ | Input |
| 2. Abnormal Maintenance (SEE NOTE 2) | \$ _____ | Input |
| 3. Abnormal Amortization | \$ _____ | III.2 / 5 |
| 4. Amortization Carry-over from
previous years | \$ _____ | Input |
| 5. Reimbursed Maintenance | \$ _____ | Input |
| 6. Net Maintenance Cost | \$ _____ | III.1 + III.3 + III.4 - III.5 |
| 7. Unit Cost of Maintenance | \$ _____ per Gallon | III.6 / I.4 |

FUEL OIL (CONT'D)

IV. COST OF CAPITAL:		INSTRUCTIONS
1. Acquisition Cost		
(From Real Property Rec.)	\$ _____	Input
2. Annual Charge (SEE NOTE 3)	\$ _____	IV.1 X 0.1
3. Systems Capacity	_____ Gallons	Input
4. Unit Cost of Capital	\$ _____ Per Gallon	IV.2 / IV.3
V. RATE SUMMARY:		
1. Unit Cost of Purchase	\$ _____ Per gallon	II.6
2. Unit Cost of Maintenance	\$ _____ Per Gallon	III.7
3. Rate A	\$ _____ Per Gallon	V.1 + V.2
4. Rate A	\$ _____ Per Gallon	V.3
5. Unit Cost of Capital	\$ _____ Per Gallon	IV.4
6. Subtotal	\$ _____ Per Gallon	V.4 + V.5
7. Administrative Overhead	\$ _____ Per Gallon	V.6 X 0.03
8. Rate B.	\$ _____ Per Gallon	V.6 + V.7

NOTES:

1. This percentage should reflect your system losses.
2. A high cost nonrecurring maintenance during the year could result in an abnormal variation in the sales rate. This may be avoided by spreading the cost over a period of five years. One fifth of the cost is included each year. Use a 25% increase in Rate A as a guide in making decisions to amortize.
3. The 10% factor in calculating the annual capital charge is mandatory.

EXPLANATION OF ANY VARIATIONS:

LOCAL PREVAILING RATE: Attach one copy when changes have occurred during the base period.

STEAM

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared By: _____

I. QUANTITY CONSUMED:

INSTRUCTIONS:

1. Quantity Purchased (From Bills)	_____	KLb		Input
2. Produced (In-house)	_____	KLb		Input
3. Subtotal	_____	KLb		I.1 - I.2
4. Percent Losses (SEE NOTE 1)	_____	%		Input
5. Losses	_____	KLb		I.3 X I.4 /100
6. Total Steam Consumption	_____	KLb		I.3 - I.5

II. COST OF PURCHASE/PRODUCTION:

1. Purchase Cost (Actual Bills)	\$ _____		Input
---------------------------------	----------	--	-------

Items 2 and 3 must be completed when a rate change has occurred during the 12 months covered by these calculations. Calculate what the monthly billings would have been at the current rate and enter the annual cost in Item 3. Attach a copy of the current rate schedule and your work sheets.

2. Date of Last Rate Change	_____		Input
3. Recalculated Cost	\$ _____		Input
4. In-House Production Cost	\$ _____		Input
5. Cost of Make-up Water	\$ _____		II.5.a X II.5.b
a. _____ KGal			Input
b. \$ _____ per KGal			VI.3 from Water Calculation
6. Cost of Electricity for Pumping	\$ _____ per KWh		II.6.a X II.6.b
a. _____ KWh (SEE NOTE 2)			Input
b. \$ _____ per KWh			V.11 from Electric Calc's.
7. Total Cost of Purchase/Operation	\$ _____		(II.1 or II.3) + II.4 + II.5 + II.6 (Use II.1 if II.3 = 0, otherwise use II.3)
8. Unit Cost of Purchase/Production	\$ _____ per KLb		II.7 / I.6

STEAM (CONT'D)

III. COST OF MAINTENANCE:

INSTRUCTIONS:

1. Normal Maintenance	\$ _____		Input
2. Abnormal Maintenance (SEE NOTE 3)	\$ _____		Input
3. Abnormal Amortization	\$ _____		III.2 / 5
4. Amortization Maintenance Carry-over from previous years	\$ _____		Input
5. Reimbursed Maintenance	\$ _____		Input
6. Net Maintenance Cost	\$ _____		III.1 + III.3 + III.4 - III.5
7. Unit Cost Maintenance	\$ _____	per KLb	III.6 / I.6

IV. COST OF CAPITAL:

1. Acquisition Cost (From Real Property Record)	\$ _____		Input
2. Annual Charge (SEE NOTE 4)	\$ _____		IV.1 X 0.1
3. System Capacity	_____	KLb per Hr	Input
4. Annual System Capacity	_____	KLb per year	IV.3 X 24 x 365
5. Unit Cost of Capital	\$ _____	per KWh	IV.2 / IV.4

V. RATE SUMMARY:

1. Unit Cost of Purchase	\$ _____	per KLb	II.8
2. Unit Cost of Maintenance	\$ _____	per KLb	III.7
3. Rate A	\$ _____	per KLb	V.1 + V.2
4. Rate A	\$ _____	per KLb	V.3
5. Unit Cost of Capital	\$ _____	per KLb	IV.5
6. Subtotal	\$ _____	per KLb	V.4 + V.5
7. Administrative Overhead	\$ _____	per KLb	V.6 X 0.03
8. Rate B	\$ _____	per KLb	V.6 + V.7

STEAM (CONT'D)

NOTES:

1. This percentage should reflect your system losses.
2. Meter readings, when available, are always preferable to estimates. However, Kilowatt-hours (KWh) may be estimated using formulas found in Item III of the water and sewage calculations. An alternate or reduced version of these formulas is:

$$\text{KWh} = (\text{Horsepower} \times 0.746 \times \text{hours of use}) \text{ divided by } 0.65.$$

Please attach copies of your worksheets when estimates are made.

3. High cost nonrecurring maintenance during the year could result in an abnormal variation in the sales rate. This may be avoided by spreading the cost over a period of five years. One fifth of the cost is included each year. Use a 25% increase in Rate A as a guide in making decisions to amortize.
4. The 10% factor in calculating the annual capital charge is mandatory.

EXPLANATION OF ANY VARIATIONS:

LOCAL PREVAILING RATE: Attach one copy when changes have occurred during the base period.

SPACE COOLING (PER SQUARE FOOT)

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared by: _____

I. SQUARE FOOTAGE:

1. Total Served _____ Square Feet

INSTRUCTIONS

Input

II. OPERATION & MAINTENANCE COSTS:

1. Cost of Fuel Oil \$ _____

Input

2. Cost of Natural Gas \$ _____

Input

3. Cost of Labor/Supervision \$ _____

Input

4. Cost of Supplies, Parts, Maint. \$ _____

Input

5. Cost of Water \$ _____

II.5.a X II.5.b

a. _____ KGal.

Input

b. \$ _____ Per KGal

VI.3 from Water Calculations

6. Cost of Electricity \$ _____

II.6a X II.6.b

a. _____ KWH

Input

b. \$ _____ Per KWH

V.11 from Electric Calculations

7. Total O&M Cost \$ _____

II.1 + II.2 + II.3 + II.4 +

II.5 + II.6

III. CAPITAL COSTS:

1. Acquisition Costs \$ _____

Input

2. Annual Charge \$ _____

III.1 X 0.10

3. Unit Cost of Capital \$ _____ per square foot

III.2 / I.1

IV. RATE A:

1. Unit Cost of O&M \$ _____ per square foot

II.7 / I.1

2. Unit Cost of O&M \$ _____ per square foot

IV.1 / 6

SPACE COOLING (PER SQUARE FOOT) (CONT'D)

V. RATE B:			INSTRUCTIONS
1. Rate A (Seasonal)	\$ _____ Per SqFt per Season		IV.1
2. Unit Cost of Capital	\$ _____ Per SqFt per Season		III.3
3. Subtotal	\$ _____ Per SqFt per Season		V.1 + V.2
4. Administrative/Overhead	\$ _____ Per SqFt per Season		V.3 X 0.03
5. Rate B (Seasonal)	\$ _____ Per SqFt per Season		V.3 + V.4
6. Rate B (Monthly)	\$ _____ Per SqFt per Month		V.5 / 6

EXPLANATION OF ANY VARIATIONS:

SPACE HEATING (PER SQUARE FOOT)
ALTERNATE 1 (HOT WATER)

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared by: _____

I. SQUARE FOOTAGE:

1. Total Served _____ Square Feet

INSTRUCTIONS

| Input

II. OPERATION & MAINTENANCE COSTS:

1. Cost of Fuel Oil \$ _____

| Input

2. Cost of Natural Gas \$ _____

| Input

3. Cost of Labor/Supervision \$ _____

| Input

4. Cost of Supplies, Parts, Maint. \$ _____

| Input

5. Cost of Water \$ _____

| II.5.a X II.5.b

a. _____ KGal.

| Input

b. \$ _____ Per KGal

| VI.3 from Water Calculations

6. Cost of Electricity \$ _____

| II.6a X II.6.b

a. _____ KWH

| Input

b. \$ _____ Per KWH

| V.11 from Electric Calculations

7. Total O&M Cost \$ _____

| II.1 + II.2 + II.3 + II.4 +
| II.5 + II.6

III. CAPITAL COSTS:

1. Acquisition Costs \$ _____

| Input

2. Annual Charge \$ _____

| III.1 X 0.10

3. Unit Cost of Capital \$ _____ per square foot

| III.2 / I.1

IV. RATE A:

1. Unit Cost of O&M per season \$ _____ per square foot

| II.7 / I.1

2. Unit Cost of O&M per month \$ _____ per square foot

| IV.1 / 6

SPACE HEATING (PER SQUARE FOOT) (CONT'D)
ALTERNATE 1 (HOT WATER)

V. RATE B:			INSTRUCTIONS
1. Rate A (Seasonal)	\$ _____ Per SqFt per Season		IV.1
2. Unit Cost of Capital	\$ _____ Per SqFt per Season		III.3
3. Subtotal	\$ _____ Per SqFt per Season		V.1 + V.2
4. Administrative/Overhead	\$ _____ Per SqFt per Season		V.3 X 0.03
5. Rate B (Seasonal)	\$ _____ Per SqFt per Season		V.3 + V.4
6. Rate B (Monthly)	\$ _____ Per SqFt per Month		V.5 / 6

EXPLANATION OF ANY VARIATIONS:

SPACE HEATING (PER SQUARE FOOT)
ALTERNATE 2 (STEAM)

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared by: _____

I. SQUARE FOOTAGE:

1. Total Served _____ Square Feet

INSTRUCTIONS

| Input

II. STEAM REQUIRED PER SQ. FT:

1. Total Steam Consumption _____ KLbs

| Input (I.6. from Steam Calc.)

2. Non-Heating Steam _____ KLbs

| II.2.a X 2

a. April-September Production _____ KLbs

| Input

b. Percent Loss _____ %

| Input (I.4. from Steam Calc.)

c. Losses _____ KLbs

| II.2.a. X II.2.b. / 100

d. April-Sept. Steam Consumption _____ KLbs per KSQFT

| II.2.a. minus II.2.c

3. Heating Steam _____ KLbs

| II.1 minus II.2

4. Steam Required _____ KLbs per KSQFT

| II.3 / I.1 / 1000

III. CAPITAL COSTS: (NOTE 1)

1. Acquisition Costs \$ _____

| Input

2. Annual Charge \$ _____

| III.1 X 0.10

3. Unit Cost of Capital \$ _____ Per KSQFT

| III.2 / I.1 / 1000

IV. RATE A:

1. Unit Cost of O&M (Seasonal) \$ _____ Per KSKFT

| II.4 X (V.3 from Steam Calc.)

2. Unit Cost of O&M (Monthly) \$ _____ per KSQFT

| IV.1 / 6

SPACE HEATING (PER SQUARE FOOT) (CONT'D)
ALTERNATE 2 (STEAM)

V. RATE B:			INSTRUCTIONS
1. Rate A (Seasonal)	\$ _____	Per SqFt per Season	IV.1
2. Unit Cost of Capital	\$ _____	Per SqFt per Season	III.3
3. Subtotal	\$ _____	Per SqFt per Season	V.1 + V.2
4. Administrative/Overhead	\$ _____	Per SqFt per Season	V.3 X 0.03
5. Rate B (Seasonal)	\$ _____	Per SqFt per Season	V.3 + V.4
6. Rate B (Monthly)	\$ _____	Per SqFt per Month	V.5 / 6

EXPLANATION OF ANY VARIATIONS:

NOTE 1: Capital costs that are not included in steam production.

SPACE HEATING (PER MCF)

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared by: _____

I. SPACE HEATED:

1. Volume _____ MCF

INSTRUCTIONS

Input

II. COST OF OPERATION:

1. Boiler Plant(s) Operation \$ _____
a. Unit Cost \$ _____ Per MCF

Input

II.1. / I.1

2. Cost of Water \$ _____ Per MCF
a. _____ KGal
b. \$ _____ per KGal

II.2.a X II.2.b

Input

VI.3 from Water Calculations

3. Cost of Electricity \$ _____ Per MCF
a. _____ Kwh
b. \$ _____ Per KWH

II.3.a X II.3.b

Input

V.11 from Electric Calculations

4. Unit Cost of Operation \$ _____ Per MCF

II.1.a + II.2 + II.3

III. COST OF MAINTENANCE:

(Boiler Plants)

1. Normal Maintenance \$ _____
2. Abnormal Maintenance \$ _____
3. Abnormal Amortization \$ _____
4. Amort Maint Carryover from previous years \$ _____
5. Reimbursed Maintenance \$ _____
6. Subtotal \$ _____

Input

Input

III.2 / 5

Input

Input

III.1 + III.3 + III.4 - III.5

(Distribution Systems)

7. Normal Maintenance \$ _____
8. Abnormal Maintenance \$ _____
9. Abnormal Amortization \$ _____
10. Amortization Maint Carryover from previous years \$ _____
11. Reimbursed Maintenance \$ _____
12. Subtotal \$ _____

Input

Input

III.8 / 5

Input

Input

III.7 + III.9 + III.10 - III.11

SPACE HEATING PER MCF (CONT'D)

			INSTRUCTIONS
13. Total Maintenance Cost	\$ _____		III.6 + III.12
14. Unit Cost of Maintenance	\$ _____ Per MCF		III.13 / I.1
IV. CAPITAL COST:			
1. Boiler Plants	\$ _____		Input
2. Distribution System	\$ _____		Input
3. Total Acquisition Cost	\$ _____		IV.1 + IV.2
4. Annual Charge	\$ _____		IV.3 X 0.10
5. System Capacity	_____ MCF		Input
6. Unit Cost of Capital	\$ _____ Per MCF		IV.4 / IV.5
V. RATE SUMMARY:			
1. Unit Cost of Operation	\$ _____ Per MCF		II.4
2. Unit Cost of Maintenance	\$ _____ Per MCF		III.14
3. Rate A	\$ _____ Per MCF		V.1 + V.2
4. Rate A	\$ _____ Per MCF		V.3
5. Unit Cost of Capital	\$ _____ Per MCF		IV.6
6. Subtotal	\$ _____ Per MCF		V.4 + V.5
7. Administrative/Overhead	\$ _____ Per MCF		V.6 X 0.03
8. Rate B	\$ _____ Per MCF		V.6 + V.7

EXPLANATION OF ANY VARIATIONS:

SPACE HEATING (PER MBTU)

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared by: _____

I. QUANTITY:

1. Heat Produced _____ MBTU

INSTRUCTIONS

| Input

II. COST OF OPERATION:

1. Boiler Plant(s) Operation \$ _____
2. Cost of Water \$ _____
 - a. _____ KGal
 - b. \$ _____ per KGal
3. Cost of Electricity \$ _____
 - a. _____ KWH
 - b. \$ _____ Per KWH
4. Total Cost of Operation \$ _____
5. Unit Cost of Operation \$ _____ Per MBTU

| Input
| II.2.a X II.2.b
| Input
| VI.3 from Water Calculations
| II.3.a X II.3.b
| Input
| V.11 from Electric Calculations
| II.1 + II.2 + II.3
| II.4 / II.1

III. COST OF MAINTENANCE (Boiler Plants)

1. Normal Maintenance \$ _____
2. Abnormal Maintenance \$ _____
3. Abnormal Amortization \$ _____
4. Amortization Maintenance Carryover
from previous years \$ _____
5. Reimbursed Maintenance \$ _____
6. Total Maintenance Cost \$ _____
7. Unit Cost of Maintenance \$ _____ per MBTU

| Input
| Input
| III.2 / 5
| Input
| Input
| III.1 + III.3 + III.4 - III.5
| II.4 / II.1

SPACE HEATING (PER MBTU) (CONT'D)

IV. COST OF CAPITAL:

1. Boiler Plants Acquisition Cost	\$ _____
2. Distribution System Acq. Cost	\$ _____
3. Total Acquisition Cost	\$ _____
4. Annual Charge	\$ _____
5. System Capacity	_____ MBTU
6. Unit Cost of Capital	\$ _____ Per MBTU

INSTRUCTIONS:

|
|
| Input
| Input
| IV.1 + IV.2
| IV.3 X 0.10
| Input
| IV.4 / IV.5

V. RATE SUMMARY:

1. Unit Cost of Operation	\$ _____ Per MBTU
2. Unit Cost of Maintenance	\$ _____ Per MBTU
3. Rate A	\$ _____ Per MBTU
4. Rate A	\$ _____ Per MBTU
5. Unit Cost of Capital	\$ _____ Per MBTU
6. Subtotal	\$ _____ Per MBTU
7. Administrative Overhead	\$ _____ Per MBTU
8. Rate B	\$ _____ Per MBTU

|
|
| II.5
| III.7
| V.1 + V.2

| V.3
| IV.6
| V.4 + V.5
| V.6 X 0.03
| V.6 + V.7

EXPLANATION OF ANY VARIATIONS:

SPACE HEATING BASED ON COAL CONSUMPTION

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared by: _____

I. QUANTITY:

INSTRUCTIONS

1. Delivered to Installation _____ Tons

| Input

II. COST OF UNLOADING:

1. Labor \$ _____

| Input

2. Equipment Rental \$ _____

| Input

3. Other \$ _____

| Input

4. Total \$ _____

| II.1 + II.2 + II.3

5. Unit Cost Unloading \$ _____ Per Ton

| II.4 / I.1

III. PURCHASE COST:

1. Purchase Cost (From Bills) \$ _____

| Input

Items 2 and 3 must be completed when a rate change has occurred during the last 12 months covered by these calculations. Calculate what the monthly billings would have been at the current rate and enter the annual cost in Item 3. Attach a copy of the current rate schedule and your worksheet.

2. Date of Last Rate Change _____

| Input

3. Recalculated Cost \$ _____

| Input

4. Unit Cost of Purchase \$ _____ Per Ton

| (III.1 or III.3) / I.1. Use
III.1 if III.3 = 0, otherwise use
III.3

IV. COST OF FIRING:

1. Labor \$ _____

| Input

2. Equipment Rental \$ _____

| Input

3. Other \$ _____

| Input

4. Total \$ _____

| IV.1 + IV.2 + IV.3

5. Unit Cost Firing \$ _____ Per Ton

| IV.4 / I.1

SPACE HEATING BASED ON COAL CONSUMPTION (CONT'D)

V. COST OF MAINTENANCE:

1. Normal Maintenance	\$ _____	
2. Abnormal Maintenance	\$ _____	
3. Abnormal Amortization	\$ _____	
4. Amortization Maint. Carry-over from previous years	\$ _____	
5. Reimbursed Maintenance	\$ _____	
6. Net Maintenance Cost	\$ _____	
7. Unit Cost Maintenance	\$ _____ Per Ton	

INSTRUCTIONS

Input
Input
V.2 / 5
Input
Input
V.1 + V.3 + V.4 - V.5
V.6 / I.1

VI. COST OF CAPITAL:

1. Acquisition Cost	\$ _____	
2. Annual Charge (SEE NOTE 4)	\$ _____	
3. System Capacity	\$ _____ Tons	
4. Unit Cost of Capital	\$ _____ Per Ton	

Input
VI.1 X 0.10
Input
VI.2 / VI.3

V. RATE SUMMARY:

1. Unit Cost of Unloading	\$ _____ Per Ton
2. Unit Cost of Purchase	\$ _____ Per Ton
3. Unit Cost of Firing	\$ _____ Per Ton
4. Unit Cost of Maintenance	\$ _____ Per Ton
5. Rate A	\$ _____ Per Ton
6. Rate A	\$ _____ Per Ton
7. Unit Cost of Capital	\$ _____ Per Ton
8. Subtotal	\$ _____ Per Ton
9. Administrative Overhead	\$ _____ Per Ton
10. Rate B	\$ _____ Per Ton

II.5
III.4
IV.5
V.7
VII.1 + VII.2 + VII.3 + VII.4
VII.5
VI.4
VII.6 + VII. 7
VII.8 X 0.03
VII.8 + VII.9

EXPLANATION OF ANY VARIATIONS:

SPACE HEATING BASED ON WOOD PELLET CONSUMPTION

Installation: _____ Period from: _____ to _____

Calculations for Fiscal Year: _____ Prepared by: _____

I. QUANTITY:

INSTRUCTIONS

1. Delivered to Installation	_____ Tons	Input
2. Consumed by Installation	_____ Tons	Input

II. COST OF UNLOADING:

1. Labor	\$ _____	Input
2. Equipment Rental	\$ _____	Input
3. Other	\$ _____	Input
4. Total	\$ _____	II.1 + II.2 + II.3
5. Unit Cost Unloading	\$ _____ Per Ton	II.4 / I.1

III. PURCHASE COST (Based on Lbs. of Pellets Consumed):

1. Purchase Cost (From Bills)	\$ _____	Input
-------------------------------	----------	-------

Items 2 and 3 must be completed when a rate change has occurred during the last 12 months covered by these calculations. Calculate what the monthly billings would have been at the current rate and enter the annual cost in Item 3. Attach a copy of the current rate schedule and your worksheet.

2. Date of Last Rate Change	_____	Input
3. Recalculated Cost	\$ _____	Input
4. Unit Cost of Purchase	\$ _____ Per Ton	(III.1 or III.3) / I.2. Use III.1 if III.3 = 0, otherwise use III.3

IV. COST OF FIRING (Based on Lbs. of Pellets Consumed):

1. Labor	\$ _____	Input
2. Equipment Rental	\$ _____	Input
3. Other	\$ _____	Input
4. Total	\$ _____	IV.1 + IV.2 + IV.3
5. Unit Cost Firing	\$ _____ Per Ton	IV.4 / I.2

SPACE HEATING BASED ON WOOD PELLET CONSUMPTION (CONT'D)

V. COST OF MAINTENANCE:

1. Normal Maintenance	\$ _____	
2. Abnormal Maintenance	\$ _____	
3. Abnormal Amortization	\$ _____	
4. Amortization Maint. Carry-over from previous years	\$ _____	
5. Reimbursed Maintenance	\$ _____	
6. Net Maintenance Cost	\$ _____	
7. Unit Cost Maintenance	\$ _____ Per Ton	

INSTRUCTIONS

Input
Input
V.2 / 5
Input
Input
V.1 + V.3 + V.4 - V.5
V.6 / I.2

VI. COST OF CAPITAL:

1. Acquisition Cost	\$ _____	
2. Annual Charge (SEE NOTE 4)	\$ _____	
3. System Capacity	\$ _____ Tons	
4. Unit Cost of Capital	\$ _____ Per Ton	

Input
VI.1 X 0.10
Input
VI.2 / VI.3

V. RATE SUMMARY:

1. Unit Cost of Unloading	\$ _____ Per Ton
2. Unit Cost of Purchase	\$ _____ Per Ton
3. Unit Cost of Firing	\$ _____ Per Ton
4. Unit Cost of Maintenance	\$ _____ Per Ton
5. Rate A	\$ _____ Per Ton
6. Rate A	\$ _____ Per Ton
7. Unit Cost of Capital	\$ _____ Per Ton
8. Subtotal	\$ _____ Per Ton
9. Administrative Overhead	\$ _____ Per Ton
10. Rate B	\$ _____ Per Ton

II.5
III.4
IV.5
V.7
VII.1 + VII.2 + VII.3 + VII.4
VII.5
VI.4
VII.6 + VII.7
VII.8 X 0.03
VII.8 + VII.9

EXPLANATION OF ANY VARIATIONS:

Appendix D - Blank Utilities Sales Tariff Book Printout (Family Housing Configuration No. 1)

- ***Blank Utilities Sales Tariff Book Printout (Family Housing Configuration No. 1).*** Blank utilities sales tariff book printout using the family housing rates computations worksheets under the family housing configuration no. 1.

Appendix E - Blank Family Housing Main Worksheets Printout (Family Housing Configuration No. 2)

- ***Blank Family Housing Main Worksheets Printout (Family Housing Configuration No. 2).*** Blank family housing main worksheets printout portion of the utilities sales tariff book when the program has been set to the family housing configuration no. 2.

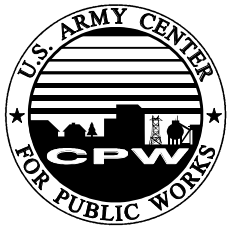
Appendix F - Blank Power for Pumping Filtered Water Worksheet Printout

- *Blank Power for Pumping Filtered Water Worksheet Printout.*

Appendix G - Blank Abnormal Maintenance Worksheet Printout

- *Blank Abnormal Maintenance Worksheet Printout.*

Appendix H - Utilities Contracting Points of Contact



ARMY POWER PROCUREMENT

U.S. Army Center for Public Works

Directorate of Army Power Procurement

ATTN: CECPW-C

7701 Telegraph Road

Alexandria, VA 22315-3862

FAX NUMBER: DSN 328-7566 or COMM (703)428-7566

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